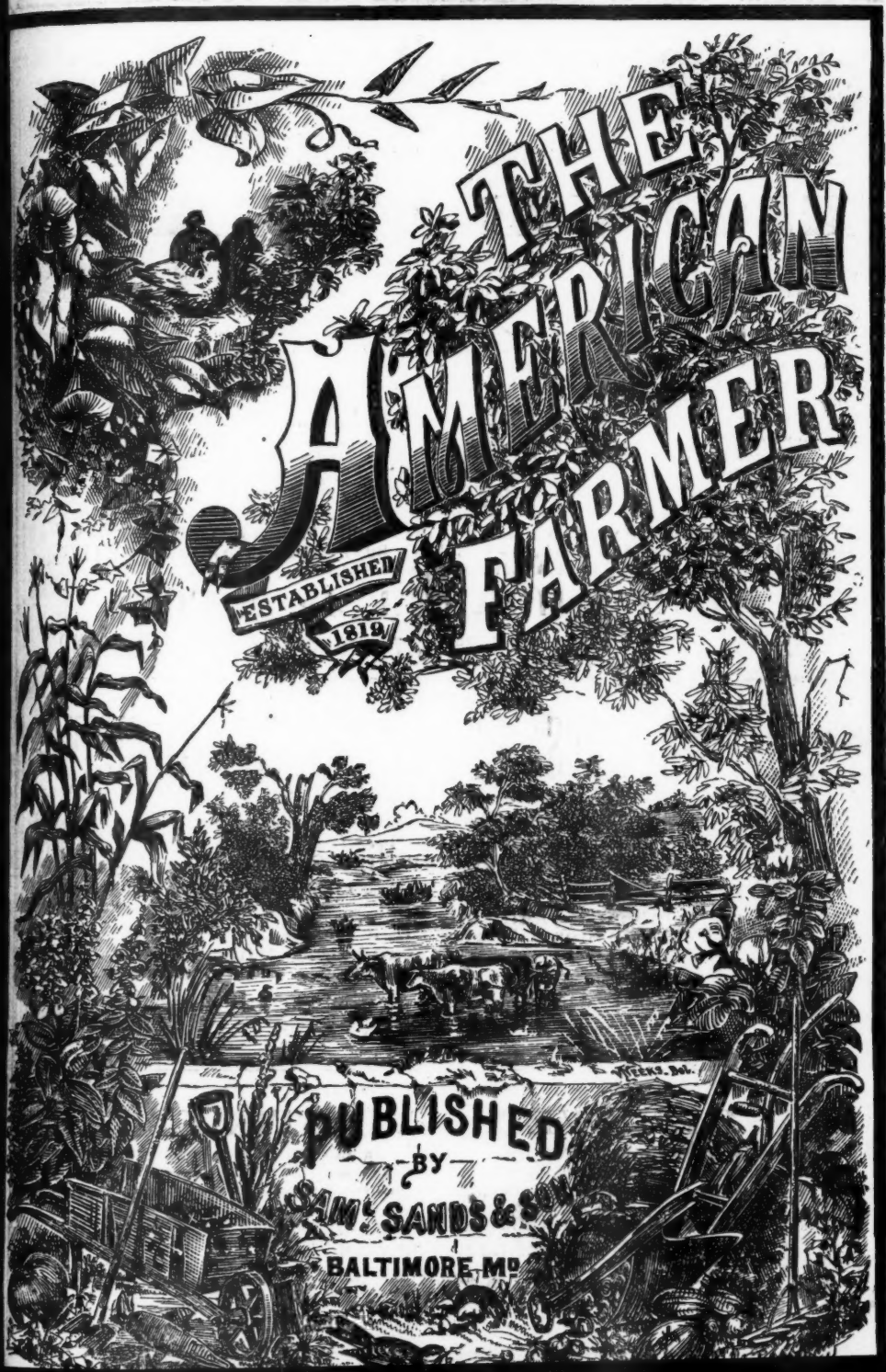
JUNE, 1876.


THE
AMERICAN
FARMER
ESTABLISHED
1819
PUBLISHED
BY
SAM'L SANDS & SON
BALTIMORE, MD.

TO FARMERS AND GARDENERS.

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Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F.)	3.74 per cent.
Organic Matter	40.12 per cent.
Containing—Nitrogen, 4.08; Ammonia 4.95.	
Inorganic Matter	56.14 per cent.
Containing Phosphoric Acid	24.52 per cent.
Containing Bone Phosphate of Lime	53.52 per cent.
Insoluble Matter	2.51 per cent.

This is the BEST SAMPLE OF BONE DUST I CAN FIND IN THE MARKET, and call your especial attention to the LARGE PERCENTAGES OF VALUABLE MATERIAL for the improvement of the soil, and to the SMALL PERCENTAGES of moisture and insoluble matter.

Respectfully, etc., P. B. WILSON, *Analytical and Consulting Chemist.*

PREPARED FOR DRILLING, AND PACKED IN BAGS, 167 LBS. EACH, AT $42 PER TON. DISSOLVED OR VITRIOLIZED BONE, $43 PER TON. BONE ASH, GROUND AND DISSOLVED, $42 AND $48 PER TON. FARMERS' SUPPLIES.

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Portable Steam Engines and Boilers,
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FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS; FIELD, GARDEN AND FLOWER SEEDS.

ALL KINDS OF FARM SUPPLIES.

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IMPROVED LIVE STOCK,

CATTLE, HORSES, SHEEP, SWINE and POULTRY. In this Department we buy only from breeders of established reputation of the several kinds, and cannot undertake to procure ordinary farm stock, such as draft horses, milch cows, &c. In this vicinity great attention is paid to some particular breeds of stock, and specimens can be had here which are nowhere to be surpassed.

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CASH (or its equivalent.)

Sam'l Sands & Son,

EDITORS AND PUBLISHERS AMERICAN FARMER,

No. 9 North St., Baltimore, Md.

THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. V.—No. 6.] JUNE, 1876. [NEW SERIES.

The State Agricultural Society.

Call for a Meeting of the Farmers of Maryland.

We received, just too late for publication in our May number, a communication from the Hon. A. Bowie Davis, President of the State Agricultural Society, informing us of his intention to invite the farmers of Maryland, and those interested and sympathizing with them, to meet in this city on the 1st day of June to consider the propriety of removing the Society from Pimlico and locating it in a situation the most suitable and most favorable of any to be found; and asking our co-operation in, and support of, this proposed change.

The movement has our unqualified approval, and we hope our farmers will by a general attendance at the meeting give their countenance and sanction to such a change of site and of policy as only can resuscitate the State Society, which, notwithstanding its liberal endowment at the hands of the State, the City and individuals, has never accomplished any good either for the farming class or for the business men of Baltimore.

The inconvenient location at Pimlico for holding its shows, all things else being favorable, was sufficient to insure failure. Nor will a mere change of situation prevent it. A thorough reinvigoration is needed to achieve success; while to remain as at present, is to defeat any alteration of programme, or change of management, however much for the better.

The present Society has never had any hold on our farmers. There were several reasons for this. Certain parts of the State were never, or never until lately, represented in its control. Its location was unfortunate, access to it being impossible save at a considerable cost of time, money and patience. The belief was general—whether well or ill founded—that the selection of the grounds, the general management of the fairs, the times of holding them, the apportionment of the premium money, were all rather directed to promoting the interests of the horse fanciers than those of the farming class. An uncertainty prevailed as to what was the general aim of the Society, and by whom its policy was dictated, and an illustration of the fatuity of mismanagement was often quoted in the contract made with the Jockey Club, by which, for ten years, the Society relinquished the most available and propitious season for holding its fairs, viz: from the 10th of October to the 10th of November in every year. No meetings of the Society were ever held, we believe, until Mr. Davis was made president, and even since there have been no general meetings at the time of the fairs. Those who remember the animated annual gatherings of the old Society and the interest which they kept up can hardly but wonder at the disregard of this feature, so useful not only in giving the members opportunities of better acquaintance with each other and of interchanging views upon the topics of the day and of their profession, but which likewise served to promote the friendly rivalry essential to success in such associations.

We think it is too late to argue as to the usefulness of agricultural societies, or of the advantages of shows where all the improvements achieved are brought before the eye. It is conceded by all that such expositions, when well managed, are productive of the very best results, and on that point any suggestions from us would be superfluous at the present time. Admitting, therefore, the good arising from these annual gatherings of the farmers of a State, from the opportunities offered them of inspecting

the best examples of improved stock, the most effective tools and machinery, the finest samples of agricultural and mechanical products; from the stimulus given every visitor to endeavor to produce something similar, worthy to be shown and deserving of public commendation; from the pleasures and profits of farmers occasionally assembling together to compare views and productions—we conclude, that in the present state of the agriculture of Maryland, there is nothing more needed than a wide-awake, active State Society,—one alive to the duties of the hour, its management entrusted to the hands of disinterested and unselfish men who seek to further the public good, not to promote private ends.

We need a Society general enough in its character and scope to form a bond of union between the farmers of the whole State; one which will act in unison with all the county societies, not in opposition to them; and composed of the best men in every section of Maryland, who are engaged in agriculture and allied pursuits.

We need a Society to stand alone, and, independent of all engagements, work for the good of the cause it is established to advance; not entangled by such alliances that the best portion of each year is prohibited to it for its own exhibitions on its own grounds.

We need a Society which shall be agricultural in fact, not in name only—one which shall encourage the display at its shows of the best specimens of farm products, farm animals and farm implements—but which shall *not run too much to horse.* Let us have horses of every class—they are needful, and we, on our part, do not object to trots or races—but do not make everything else subordinate to them. Let the distinctive features be purely agricultural, and whatever else is for diversion and amusement be honestly so stated.

Let us have a Society which shall be directed by the public-spirited farmers of the State, and which shall include the young men who are coming on to be her reliance and her support. And there are many young farmers in Maryland of whom she will yet be proud; energetic, intelligent, patriotic, industrious,—they are the ones who, forgetting what is behind and looking only to the things that are before, are to lift our agricultural interests from their present prostration, and to show that our State is to her sons a goodly heritage, yet to blossom as the rose.

If we cannot have such a Society as this, the present one will do as well as any other, and it may, with advantage, be left to expire at Pimlico, and President Davis may spare himself the pains of endeavoring to secure its removal; in which, as in all his efforts for its success, he has deserved only praise from our farmers, who, we must say, have been slow to appreciatively second and carry out his endeavors,—thanks to the incubus of Pimlico!

We believe, however, that the meeting of June 1st will show that there is material enough at hand for a successful Society, and we sincerely trust that our farmers will largely respond to the call, and attend, not only as individuals, but that every farmers' club, every grange, and every county society, will send delegates to represent them, that the attendance may not only be large in point of numbers, but representative in its character and fitted to speak authoritatively for the farming classes of the State in the conclusions at which it may arrive.

The place of meeting is announced at the rooms of the State Society, Eutaw and Fayette streets, but if the attendance is what is expected, an adjournment will be had to a larger hall. The hour fixed is 11 A. M.

It will be proper for us here to refer to the site which it is proposed to secure for the home and shows of the Society. This is a portion of the land recently purchased from Ross Winans, Esq., by the Baltimore and Ohio Railroad Company, and so conveniently situated as regards its Washington Branch line and the Baltimore and Potomac R. R., that in point of time it is almost inside the city. It is the same situation recommended in *The American Farmer*, for March, 1875, by a correspondent, one of our most enterprising and accomplished farmers, as combining, by bordering on these two great lines, more advantages than any other location in the State. From Canton, Calvert, Camden, Charles street, Pennsylvania avenue and other stations, trains could and would be run every few minutes, and passengers quickly landed on the grounds at a trifling cost. From the Southern and Western counties trains could run to the very gates of the Fair, and thousands there spend the day, and, if so minded, return at night to their homes. And not only from every part of our own State, but from the surrounding ones, access to this point would be more convenient than to any other within her limits. Stock and machinery, as well as people, can be put down here with the minimum trouble and without transfers or handlings. The South, the West and the North are all there at the very doors of the Society, and practically Washington would be little farther off than Baltimore; and with the opportunities all the railroads, with

their abundant facilities, would gladly furnish to both those large cities the show-week would be one continual holiday and festival, and our neighbors on every side can be relied upon to attend themselves and bring their flocks and herds, and the products of their farms and dairies, of their shops and manufactories.

The officers of the Baltimore and Ohio Railroad Company have signified their willingness to dispose of enough ground, on suitable and favorable terms, for the purposes of the Society, and it now only remains for the farmers and their friends to move energetically and promptly, that the opportunity may not be lost, now so happily offering.

We have, as consonant to the main objects of the *American Farmer*, and its circulation among the farmers, addressed ourselves only to them; but whilst a robust and successful Society is of the first importance to them, it would be not less useful to the business men of Baltimore. Indeed the handsome original donation ($25,000) of the city, and her annual subsidies since, as well as the gifts of her citizens, (some $50,000) were all based upon the supposition that the fairs would bring hither many strangers every year. Those at Pimlico have disappointed that expectation, and would continue to do so. It remains for our citizens, therefore, to unite with the farmers in the effort for improvement, such as is only offered by the suggested change to a convenient and desirable site.

Immigration to Virginia—Clover as a Renovator.

The following communication from W. W. Webb has been forwarded to us by a gentleman of the highest standing, who has for years been actively engaged in efforts to induce immigration into his State. In his note, requesting its publication in the *American Farmer*, our correspondent remarks:

"There is one thing about our Virginia lands which I never see noticed, and that is: their clover-bearing capacities, which they possess to an eminent degree. This fact adds 100 per cent. to their value, and makes them capable of the highest improvement. All of them are rich in the mineral elements, and all that is wanting to restore their former productiveness is to restore the organic matter by growing clover. Immigrants may come here and buy these lands for $5 per acre; and if one will bring enough clover-seed with him, and a little extra capital and good managing capacity, he may make them rich in a couple of years. Sheep-raising might be made exceedingly profitable here. It costs scarcely anything to raise sheep in Virginia. My sheep do not cost me in feeding more than ten cents a year in addition to the pasturage. Everybody has more land than they can cultivate; and the vacant lands afford any amount of pasturage."

[*From the Richmond Christian Advocate.*]

On the 11th of January I left my home in Virginia, and have been traveling through many of the Eastern and Northern States lecturing and talking and writing up the old land, and trying in an humble but faithful and honest way to show the inducements we can offer, and to encourage land purchasers and settlers to come into the State. I would advise our people to stay at home, and be thankful that they have a home in such a country. In all my travels, and I have been over most of the United States, I have never seen any country offering the same inducements and advantages. Gen. Taylor, as the representative of the foreign bond-holders, made an address before the Legislature, in which he compared the old State to a sinking ship or a falling house. I would repel the insinuation. With proper management on the part of the State, the surplus lands can be so utilized as that they will not only pay the interest on the State debt, but the whole debt of the State in ten years. But O, the old fogeyism! the fighting of shadows and ghosts of dead negroes, and talking about issues that have been dead for ten years. Oh, for a Cromwell! I am greatly encouraged as to the future of Virginia. The great financial crisis that has swept over the land has stopped for a time the great flood-tide of emigration to the West, and has given time for the people to think; and Virginia is now asserting her claims and making known her resources and advantages. The goose is dead that layed the golden eggs for New England. We need be no longer hewers of wood and drawers of water for them—we can live within ourselves, grow rich, and rest under our own vine and fig-tree. You will ask what are the evidences of this? Go into almost every real estate office from Richmond to Boston; maps and descriptions of Virginia are made most prominent; you find it *placarded* in all their offices in large letters, "Go South, young man!—go West has played out;" and their talk is principally of Virginia.

The Northern papers are writing up the old State. Western men are anxious to trade their lands for Virginia lands. Men in Northern cities are anxious to trade for Virginia lands. What does all this mean? Is this an evidence that we are on a sinking ship, or in a falling house? To my mind it rather looks as if there was danger of sinking elsewhere, and some of them are trying to get aboard of the old ship that is so nobly riding the billows. Richmond is the most perfect gem of a city in the United States, and offers more inducements and attractions to capitalists than any other. There, too, are the small farmers—the *poor men*, so designated—that are getting to be a power in the land, so beautifully alluded to by Gen. Lee in a recent article to the *Farmer*. And our young men, that are now staying at home, that are to make the old land flourish and blossom as the rose. The future of Virginia is exceedingly bright.

W. W. WEBB.

Cultivation of Jute.

A Scotchman, Mr. David James, in a communication to the *New Orleans Times*, gives an interesting statement as to the advance which has been made in the growth and use of this plant within the past forty years—and as it is always our desire to endeavor to induce our countrymen to add to the list of their productions which are necessary for the various avocations of trade, we make some extracts from the writer's paper on the subject:

"From the experiments made in 1873, I am confident that jute can be produced in Louisiana of as good quality, and at as cheap a price as in India; therefore there cannot be a safer business than jute manufacturing here, and the growers will have no difficulty in profitably disposing of their crops to the manufacturers of the United States. The experiments made in this State in jute growing in 1873, as reported by the Commissioner of Agriculture for the United States, see page 267, 272, prove incontestibly that the article can be produced here of good quality. The observations do not appear to have been sufficiently exact, but it is quite safe to assume that the weight per acre would be not less than that of India, in which case, at a low average, the return to the planter would be at least $60 per ton, gross. I have not touched on the importance of such a crop of jute as an adjunct to the agriculture of the State, though this is of very great importance indeed. I am of opinion that jute can be successfully cultivated along the Gulf coast, including the rich lands of Honduras and other Central American possessions. The fact that jute may become one of the great products of the Southern States, is one of many proofs that the extent of the resources of this country is imperfectly known to its possessors."

He says that Louisiana is capable of growing profitably sufficient raw jute from which to manufacture all the cotton bagging, gunny bags, corn bags, grain sacks, burlaps, carpeting, etc., required in the United States: besides what might be exported of such manufactured goods to the West Indies and South America, etc. People here have no conception of the magnitude of the jute trade. It is scarcely forty years since jute fibre was introduced into Dundee, my native town. I was then engaged in one of the factories in which it was first manufactured. The annual consumption of jute in Dundee might then have been about 50 tons; now it is 40,000 tons per annum. Then the population of Dundee was about 30,000; now it is 130,000. So vast has this trade become that Dundee has acquired the name of Juteopolis. But extraordinary success of Dundee in this industry, has stimulated competition in other towns of Great Britain. Perhaps the largest jute factories out of Dundee are those of Barrow-in-Furness, in Lancashire. There are considerable works in London, Liverpool, Glasgow, etc."

In New York, Brooklyn, Philadelphia and other American cities, jute works are being established, the projectors availing themselves of the large protective duties in their favor—the raw material being imported from India.

German Millet.

We are not prone to run after untried novelties, knowing how many deceptions have been attempted upon the farmers of this country since our first intimate connection with its agriculture. Hence, when we noticed the apparent extravagance of some of our cotemporaries at the Southwest, as to the great yield of this new variety of Millet, we were disposed to allude to it but incidentally, until we had further evidence of its real value. We have now before us a copy of a letter to Col. D. Wyatt Aiken, of the *Rural Carolinian*, under date of 8th April, from a correspondent in Alabama, which the editor appears to fully endorse as worthy of all credence, and which we copy for the benefit of the readers of the *American Farmer*, as another evidence of the practicability of securing the necessary forage crops for all the stock that can be raised at the South.

DEAR SIR:—In the last number of the *Carolinian*, in your answer to T. W. H., Pomaria, S. C., enquiring in regard to German Millet, you seem to think it the same as Hungarian Millet (or grass.) Enclosed I hand you a head of German Millet, which you will see at a glance is quite different from the Hungarian, also different from Missouri Millet.

I raised the above three kinds last year.

As it may be of interest to you, I will give you my experience with the above kinds, and the results.

I sowed twelve (12) acres in German Millet, and cut forty-seven (47) four-horse wagon loads; would have cut one-third (⅓) more, had it not been for the drouth. Cut seven four-horse wagon loads from one acre. I used no manure on any of it. The land sowed would make a favorable year one-half bale cotton to the acre. It is claimed by some that it will make on the best lands from four to six tons per acre. I am content with *two tons*, which is forty dollars per acre. I am speaking where no manure is used.

The Missouri Millet did not yield like the German, but the land was not quite as good and not as well prepared; but, if all things had been equal, it would not have turned out like the German, and besides my stock would not eat it when they could get the German.

The Hungarian Millet (or grass) was a failure. There was no difference in the land and preparation from that of the German Millet, only it was sown later. I did not cut it. I am satisfied it can't be raised successfully on our lands unless highly manured or on trod lands, cowpens for instance.

The seed of German Millet can be purchased in Nashville at $1 per bushel. They were worth last year $4.50 per bushel.

My Mode of Preparation.—Break the ground in January with a double horse turning plough. When I get ready to plant, about the middle of April, or as soon as danger of frost is over, I break with a single-horse turning plow, then run an iron-tooth harrow over the ground, sow

the seed three-quarter bushel to the acre on the best lands; if the land is thin, half bushel, then run the harrow over again. If you have no harrow, sow your seed upon the fresh plowed ground and brush them in as you would turnips; be careful not to cover them too deep.

When sown 15th April, it will be ready to cut first and second weeks in July, after you are through with your crops; *no cotton to chop or corn to plough;* can put all your hands in *and your neighbors;* not like wheat and oats, come on when you have everything to do.

I cut in the dough state with the common grass blade; can't use the cradle or reaper; they will not take it. I never tried the reaper, but know parties that have, and it failed. As I cut it, have it raked up in windrows and give it about one-half day's sun, then put it up in cocks and let it remain in the field about one day; then house it. Care should be taken not to give it too much sun, as it will bleach it and injure its quality. If you let it lie as it falls from the blades the sun will bleach it too much.

I believe one-half of the hay raised in the South is rendered worthless by being *bleached to death* by the sun in curing it. All hay should be a *peagreen* when cured. *White-yellow* hay may keep stock alive, but I don't think it will make one pound of flesh.

I have said a good many things that are known to you, but there is a universal lack of information among the farmers of the South about raising and saving long forage.

I have seventy-five acres in wheat that is heading out, and, from present indications, will make twenty bushels per acre. I sowed one bushel of salt to the acre to prevent rust. Have the same amount in red rust-proof oats that looks splendidly. Have a herd of forty-four head of pure Berkshire from imported stock, that are doing well. Am plowing corn. Cotton coming up.

Corn Fodder vs. Grass.

At a meeting of the American Dairymen's Association held at Rome, N. Y., Prof. L. B. Arnold stated that he had taken the milk of three patrons of a cheese factory in October, who were feeding nothing but grass, and the milk of three others who fed nothing but corn sown broadcast. He took an equal quantity of the milk of each, and curdling it with the same amount of rennet at the same temperature, found after drying the curd, that the milk of the corn-fed cows gave 8¼ per cent. of curd, while that from those fed on grass alone gave only 6¼ per cent. of curd, showing a gain of nearly 33 per cent. in favor of corn fodder over grass. Of course, one experiment does not prove a case, especially as there may have been other conditions that were not taken into account, which may have affected the result. It looks, however, as if it were perfectly safe to make calculations to put in a liberal area of corn this spring to be used for fodder.

At the same meeting, Mr. C. L. Sheldon accounted for the shrinkage of a lot of cows in their yield of cheese, equal to more than 9 per cent., by the fact that the feed in the pastures grew faster than it was consumed, and consequently became dry and tough, losing a large proportion of its nutriment. One patron of a factory had exceeded the average by more than 11 per cent. by feeding corn fodder through the months of July, August and September.

Preventive of Rust in Wheat.

Dr. Thos. P. Janes, Commissioner of Agriculture of Georgia, has issued a circular to the wheat-growers of his State, in which he says that having received information that the wheat in many sections is being injured by the rust, he suggests the trial of nitrate of soda on a small plat as a preventive, and asks that a report of the results to his Department at Atlanta be made. Dr. Janes gives the following directions for the use of the nitrate:

"Pulverize well and sow broadcast over the wheat when 'in the boot,' while the dew is on the blades, at the rate of seventy-five pounds to the acre. This is recommended as an experiment as far as preventing rust is concerned; but the benefit to the wheat is an established fact.—The discovery of a preventive of rust is of vast importance."

Late Planting of Tobacco.

In some parts of Virginia great destruction of plants has been done by the fly; and Dr. Jno. R. Woods, of Albemarle, Va., in a letter of 5th May to the Richmond *Whig*, suggested "that planters whose plants had been destroyed by the fly might still have plants by properly preparing, manuring and watering hot-beds on the border of a stream. At this late period plants would not grow sufficiently large for planting before June 15th. This, perhaps, may be considered by some farmers to be too late to commence setting out the crop. I will, however, state that some of the best crops I have ever made were planted between June 15th and July 1st."

The Dr. adds: "If the ground is thoroughly prepared, manured, and cultivated, especially when young, kept tight, no grass or vegetation permitted to grow, all planted in June, will make good tobacco. Many years since I did not commence planting until July 3d and finished the following day. The season was very good, and but little replanting was necessary—the plants commenced growing very soon, and it took only three to make a pound of cured tobacco. Such seasons are, however, rare in July, and seldom will tobacco start to grow as this did during hot weather.

"The ground was admirably prepared and well fertilized with Peruvian guano, dissolved bone, potash and plaster, in addition to a liberal application of farm-yard manure."

OLEOMARGARINE.—The butter trade of Baltimore have resolved that no oleomargarine or adulterated butter be sold by us as butter; and that the wholesale and retail dealers in butter, of the city of Baltimore, who do not sell oleomargarine be requested to put up a sign in their stores, stalls or places of business—"No oleomargarine sold here."

Correspondence.

On the Management of Lime.

Messrs. Editors American Farmer:

By Mr. McGinnis' request I enclose the accompanying very valuable and striking article which he has been good enough to send me, to you for publication in the *Farmer*, to which I am a subscriber. I part with it reluctantly and only because the writer so desires, and because in a printed form it will be more available than in manuscript; but if you decide not to publish, return the copy to me. I myself attach great value to the views of an original thinker and a man of unequalled sagacity and experience. These observations I think apply to some previous communications from the same source to the *Farmer*,—but to none are they more applicable than the present one.

Very respectfully, gentlemen, your obt. serv't,
WM. LEIGH.

Falling Waters, Berkeley Co., W. Va., May, 1876.

WOODSTOCK, VA., *May 13th*, 1876.

WM. LEIGH, ESQ., *Falling Waters, West Va.*

Dear Sir:—Yours of the 25th ult., and also of this month, to Messrs. Danner & Newman, requesting my views on the management of lime, have been handed me for reply.

You propose to burn lime from the stone, and, as I understand you, slake with water, and apply with the spreader; leaving the lime in contact with the open air a month or more, before harrowing or plowing in. I see nothing to disapprove in this plan; but I will, however, make some suggestions, that may be useful to you, if you are not conversant with the properties of lime.

Two suggestions, of more importance than everything I could say about it, are to:

1. Make it fine as possible.
2. Disseminate it thoroughly.

To these rules there is no exception. They stand over every other consideration, and embrace the whole *general* law on the subject. They apply to its use in any quantity, for any purpose, on any soil, in any country.

Other questions may arise, as to degree of causticity, mildness, &c. But they are subordinate; of special application, under special circumstances.

Coarse lime, as that from the British chalks, is far better than that from our best stones, if the latter be exposed to heavy rains, or in any way to make it lumpy. But if you use no more water than will chemically combine with the lime, and become thereby solidified, your lime will be worth five-fold more than from the coarser chalks of England,—yours falling to impalpable fineness, whilst the chalks are granular.

Too much water, or its too rapid application, would granulate or run your lime into lumps; resulting in mortar instead of lime. Of course you will be careful not to produce such a result. This mortar possesses all the inherent agricultural properties of the lime it contains, but its *availability* is lost, by violating the law of *fineness*; and also, by rendering it impossible of *dissemination* among the atoms of soil. It is impracticable, and perhaps impossible, to reduce it to the fineness of well-slaked lime; and it can never be completely merged in the soil, but remains a mere mixture of foreign matter, instead of a chemical combination of lime with the soil. When lime gets into such a state, it is cheaper to abandon it; go to the rocks, and begin anew.

Unslaked lime is often thrown in little piles, to scatter after it has slaked. Heavy rains fall on it, more rapidly, or in greater quantities, than will combine with the lime, and it runs into lumps and cakes, never falling to powder, and never *combining* with the other constituents of the soil. The vile practice has wasted more treasure in Pennsylvania, Maryland and Virginia, than would have been required to effectually and beneficially lime a dozen States. It rests on a notion, that lime must be applied in the caustic state of hydrate. If this were true, the practice prevents the accomplishment of the purpose. For lumps and cakes or even granular lime, in, or on the soil, will become carbonates, to the extent they carbonate at all, long before they will have any beneficial influence on the soil. For many years, none of it will combine with soil, if ever, except what falls into fine powder by spontaneous change, without rain, in spite of intended exposure. But the whole thing is erroneous. No good reason has ever been advanced for incorporating caustic lime, even though it were powdered, with the soil, in preference even to pure carbonate of the rock, marls, &c. Much less in preference to well-slaked burnt lime from stone.

It has been said that the caustic state, in fine powder, acts with greater vigor than the carbonate, on "sour" soils. But little weight should be given this, until a reason is rendered; especially, when we know that any sort of lime, in fine powder, will neutralize acids of the soil; and no kind of lumpy lime will correct acids, or perform any useful office in the soil.

The presence of hydrate of lime in the soil, in contact with plants just germinating, ("sprouting") is beyond all question *ruinous to that crop*. Not because it "burns up" the germs. The tangible heat, evolved by the sudden slaking of lime, is unknown, or imperceptible, in its slow spontaneous change, in or on the soil. The heat is produced by the rapid chemical union of water with lime; the conversion of water from a fluid to a solid state.

The log is said to *rot* in the forest, and to *burn* in the fire. Yet the same *quantity* of heat is supposed to be produced and expended in both cases. But the same *degree* of heat is never present in the former process. It is slow, and imperceptible. The germinating plants are not burnt, but *starved*, by the carbonation of caustic lime, *in their presence*. The first visibly vital action of a plant is produced by the influences of heat and moisture on the embryo in the seed. These agencies start the phenomena of active life.

The next step to prolong life, until the plant is able to acquire and appropriate other food, is the administration of carbonic acid. The plant assimilates this, as the new-born infant digests

milk, before it can take or use any other food; and lives on it for a brief period. If carbonic acid be absent from the soil, in contact with the embryo germs, or be present in combinations unavailable to the present state of the plant, it will perish before it can form roots and leaves, with perfect organism, for the elaboration of other food from the soil, or the carbonic acid from the air above ground. If the acid be present, but not in sufficient quantities, the plant will languish, and make a feeble effort at the very period the most vigorous growth is essential to its safety against a thousand enemies, it is so ill able, at best, to resist.

You are aware that carbon forms, in general, three-fourths of the structure or body of plants. In maturer stages of growth,—after the formation of perfect leaves, with cells, and chlorophyl grains,—these organs absorb carbonic acid gas from the atmosphere. This is decomposed in the leaf-cells and tissues; its oxygen, for the most part, exhaled; and the carbon, assimilated through the fluids, or sap, into the body.

With the exception of the minute quantity inherited in the seed, from the parent, which in small seeds, especially, is only sufficient to start the machinery of life, the carbon necessary to form the leaves and tissues, that now acquire and assimilate carbon into the whole frame, as above explained, was obtained, *in infancy*, from the soil *in contact* with its tender and almost helpless germs.

There is, then, no conceivable thing more important than that the soil, in the first struggle of the plant to form these organs, should be well stored with carbonic acid in a state the most acceptable, and easy of assimilation. Happily, nature has supplied it. And unhappily, too often, the ignorance and perversity of man has locked it up, in compounds, unavailable to the tender germs and imperfect organs, which are given to form, with the aid of man's labor and skill, the more perfect organs of maturer life.

Hydrate of lime is converted to carbonate, by the absorption of carbonic acid. If this process goes on in the air above ground, it does not injure the plants; if, in the soil, in contact with plants emerging into the first stage of life, it is the very worst deprivation they could suffer, except the absence of water and heat. Yet this very thing is brought about every day.

On every hand, we see farmers pretending to know their business, in an age of science, practicing empiricism, on legendary superstitions ignoring learning, and embracing ignorance essaying to feed, and starving the plants; adding another, to the thousand enemies, arrayed by fallen nature, against their infant struggles.

Instead of loading the lime with carbonic acid from the atmosphere, it is *rushed* into the soil, to absorb the small amount that might otherwise come in contact with the germ of a plant. Carbonate feeds, and hydrate starves the young plants. Yet, because somebody has said, that hydrate acts with greater energy on "acid" soils, without reference to the feeding of plants; or because of some other legend, with less support, there is a ruthless determination to get the lime in, before it acquires carbonic acid from above ground, that it may take it from the soil.

The hydrate, of course, should never be applied at or near the time of planting. It is probably as good as the carbonate for *established* crops; because they having the necessary organs, can and do, for the most part, acquire their carbon from the atmosphere. The hydrate is more soluble, if in the same state of fineness. But it is all soluble enough, if in a proper state of division.

The injurious results from hydrate, above explained, are inevitable, but transitory. The soil will, ere long, be resupplied; the carbonate meanwhile commencing a round of unceasing changes, whereby carbonic acid will be liberated; and in its *nascent* state be readily absorbed by germinating plants. But they cannot stand even a short deprivation, at this stage of life. Those that survive it will languish, and become the prey of a thousand parasites, and other ills, that never attack the vigorous, well-fed plant. They may get enough to languish and live, in spite of the barbarous treatment. But to starve a plant, within an inch of its life, is bad husbandry. If not less cruel, it would be far better husbandry, to wipe out the crop, in such a fix, and commence anew.

The advocates of hurrying lime on, or in the soil, before it carbonates, say it loses its virtue, as it grows older; and so it does, lose its *virtue* of absorbing carbonic acid, from the soil, and that is all.

You propose to allow your lime to lie, after spreading, a month or more; and then harrow, or plow in. Assuming there is no crop in, and probably will be none before autumn or spring, I hardly see the necessity to let it lie on the surface for any period, if you determine to plow or harrow at all. The necessity of plowing or harrowing, if only for this purpose, of mingling with the soil, will be superceded by the use of the spreader. It will so distribute it, that unless in extraordinary quantities, it cannot run together, nor cake, but will sink into the soil; and in a month or so you will see nothing to plow or harrow in.

On my red clay land, the spreader applies it on clover fields, forty or fifty bushels per acre, so that it sinks into the soil and disappears; except the granular lumps, unavoidable by the best management. These are of no present value, whether on or in the soil, and never will be, till crushed in cultivation, or tramping of stock. Harrowing, with a slanted-tooth harrow, will *preserve the distribution*, better than a plow.

If lime is plowed under with a turn-plow it should be plowed up again the following year; or a large portion will sink below the reach of the plow, or of the plants. If your harrows are constructed on the plan of vertical or rake-teeth, they will rake the most of it, into the lower spots, where it goes too soon, any way. And if the soil is foul, with vegetable fiber, the rubbish will be dragged, and the lime with it, into accumulations, here and there, when the process of disgorgement takes place; and thus, the even distribution of the spreader is lost. A harrow, with teeth properly arranged, and slanted 50 or 60 degrees, will not gorge or drag rubbish, on any soil; and of course, is not liable to this objection.

I have had a good deal of adverse experience, in burning lime the old-fashoned way with wood.

I think at the price of coal, in your vicinity, it is better to erect permanent "draw" kilns.

Lime is produced, by depriving the stone of its carbonic acid. A certain, very high, degree of temperature decomposes the stone, by a liberation of the acid, which passes off in the form of gas. Two things, therefore, are necessary for the conversion of stone into lime:

1. That *degree* of temperature, or *intensity* of heat, in all parts of every stone, at which the carbonic acid is liberated.

2. *Egress*, for the escape of the gas evolved.

These two circumstances happen under the blow-pipe, in a blacksmith's shop; where I have reduced stone, as large as the fist, to pure lime, in a few minutes.

You will perceive, therefore, that it is not the *quantity* of fuel, or heat expended, that decomposes the stone, in the liberation of the acid; but the *degree* of temperature or *intensity* of heat.

These are the ultimate objects to be kept in view: in the construction of the kiln; the breaking and laying of the stone; the distribution of coal, or the selection of wood. If burnt with wood, it should always be dry and sound.

I have received many requests similar to yours, that lie unanswered, for want of time, which I hope to answer through the columns of the *American Farmer*, and as this will respond to many others, I will ask the favor of you, after reading, to forward it to the editors of that journal, for publication. If I have failed to meet all the points you desire, let me know, and I will interweave further suggestions in communications to the *Farmer*.

I would also call your attention, as well as that of other correspondents, to a series of papers on the "True Theory of Farming," signed "Freedom," appearing in the *Farmer* in 1874-5. General principles are there attempted to be set forth, in plain terms, that may be of use in connection with nearly all agricultural questions; and will certainly make more intelligible, what I have here, and may elsewhere, be able to say in the future.

If health permit, I shall continue the "True Theory," over my real signature; wherein an attempt will be made, to treat of the preparation, and cultivation of the soil; the use of lime and other fertilizers, &c.

I am, very truly yours, L. H. McGINNIS.

Saving Orchard-Grass Seed.

Messrs. Editors American Farmer:

Your ever-welcome letter of the 11th was handed to me on my return from (to me) a most wearisome attendance on our Circuit Court, now in session, in which you ask of me all I may know about saving and preparing the seed of the Orchard grass, in which I have had a good deal of experience.

After much vexation and heavy loss, in my own and with the inexperience and too often greater carelessness of others, I have come to the conclusion, with timely attention in cutting, tying up, dozening, and getting out with due care and safely putting away, it is as easily accomplished and with about as much profit as any crop we can make. The saving of the Orchard and the Randal grass seeds, I think about the quickest, easiest, most pleasant and profitable operation I now remember in the long lists of yearly jobs done on my farm; but like every other thing worth doing at all in these reckless times, it must be timely and properly done to yield its full profits.

The seed should not be allowed to get so ripe as to shatter when being cut, or all of the very best seed will be lost. When getting to the cutting stage it should be closely watched; for after it has reached its proper ripeness it gets ruinously beyond that point more rapidly than any one not well acquainted with it would suppose. Herein has been the great cause of so much vexation and dissatisfaction with many in the saving of these most valuable and profitable crops. When able, I closely watch it myself, and test it by striking it with my walking-cane. It is better to cut it a little too green than permit it to get too ripe. Cut, and tied up in small bundles, and near the butts, immediately after the cradle, and put up in small dozens, without caps, like corn, it will fully mature, and the seed will rapidly dry out. When thus timely cut you can continue to cut all the day; but after becoming too ripe, it should be cut, tied up and dozened while the dew is on it, or after or during a slight rain. When even thus secured it will rapidly dry out (if hot sun and brisk wind) in a day and a half, and be ready for the saving process. This should be carefully done, by taking to the field a large sheet,—such as is often used with the old-fashioned threshing machines,—as the seeds sometimes shatter and fly much more than one would suppose; spread the sheet so that a careful hand can take up the dozens by the top, or in his arms, so as to keep it erect until gently laid on the cloth; then give the bundles a few hearty shakes, and then a few thumps with a walking-cane, or any two-foot stick, and you will be astonished at the quantity of the very best seed two or three brisk hands will get out and clear and bag in a very short time.

A very slight breeze will winnow it sufficiently, as but little chaff comes off in this slight operation. You can then redozen it, or, which is better, haul it to the barn, if dry enough, under the band or tie, where you can at your leisure give it another shaking and thumping with the little sticks. The seed thus gotten out is of the very best quality and free from chaff and dirt. Then flail or run it through the threshing machine. Then run it through your wheat-fan, closed up and gently turned; and at your leisure run it through a hand-sieve made for the purpose, and a slight breeze will blow off the chaff, which I usually sow thicker on my poorer spots and missed places on the old grass-lots and run a harrow over it, and with all your care, you will be surprised at the quantity of seed left in the chaff. It is now much beyond my usual bed-time, and I must bid you good night, fondly hoping what I have thus hurriedly written may prove of some benefit from which some more gifted of our craft may mature a better plan and thus help us all on at least to the profitable saving of our own seeds.

With best wishes for the health and happiness of you both, and especially of my good old friend Mr. Samuel Sands, and the highest suc-

cess and prosperity of all the remaining old and the numerous young readers of the dear old *American Farmer*, as ever, most truly, your old friend and warm admirer, GEO. C. GILMER.

Near Charlottesville, Va.

P. S.—The seed should be kept distinct, as the quality will be very marked, as first, second and third, as to weight and worth. G. C. G.

P. S.—Can you, or some of your numerous readers, enlighten me as to my chances of success in well-preparing and manuring a lot and about the last of June sow a half-bushel of buckwheat, a bushel of rye (or winter oats) and grass seeds or clover, the buckwheat to be cut this fall, the rye or oats next harvest, and the grass stand for a future cheering monument of my masterly effort on a new departure? *

G. C. G.

[*We should be glad to hear from any of our readers whose experience will be serviceable to our venerable correspondent in the plan he suggests.—*Ed. A. F.*]

Changes in Farming.

By permission of the old *American Farmer*, we will lay before its readers some reminiscences of by-gone days and changes in farming, &c. Time seems long in prospect, but short in retrospect. Few have absolute knowledge of the future, but may form opinions from the past, as history often repeats itself: meantime, stick to fundamental principles.

We can but admit this to be the age of improvements, &c.; that the genius of the people is bent on inventions and improvements; and they go on almost as rapidly as the fashions; so much so that one is afraid to buy an improvement on a machine for fear it may soon be superseded by something yet simpler and better.

I once knew a gentleman who had a manufacturing establishment, with which he drove a lucrative business. By some means it was burnt down, and he thought he had sustained a great loss—and doubtless had. The idea struck him to go abroad, and see what better could be done. He saw other and better machinery. On his return, he determined to build up anew; and with improved machinery, acknowledged the fire had been advantageous to him, as he could turn out more and better goods, at considerably less expense.

The first and most necessary occupation is agriculture, because it furnishes the prime necessaries of life; but, at the same time, as a business, it is dependent on others for markets,—it must have the wherewithal to supply its needs.

Let us revert somewhat to the past, and see in time what improvements have been made. Many implements of the olden time have been thrown aside. The old coulter bar-shear plow is thrown aside, and substituted by many new ones; the one-horse wooden mould-board superseded by the shovel plow; the old cultivator by the double and treble-shovel plows; the hoe was used to cover the corn—now there is a coverer drawn by the horse; seeding was done broadcast by hand—now it is done by grain drills; harvesting was done by the sickle or cradle, and now by machinery drawn by horses; timothy and clover, formerly mowed with the scythe, now by machinery; instead of machines for threshing grain, formerly it was threshed by flails, or trodden out by horses. The fertilizers in those days were obtained principally from the barn and stock-yards; the first adjuncts were clover and plaster, and for years were considered amply sufficient. More recently, Peruvian and other guanos and artificial combinations are extensively substituted. Not much doubt exists as to their utility; yet in some seasons it is impossible to be successful. It seems all lands after long cultivation part with their original fertility, and can only be renovated by good cultivation and artificial means: so, farmers, continue to be vigilant, industrious and liberal. A short article cannot include all that might be said on the theory and practice of farming; yet other matters bearing on it are almost as important. The farmer should find out and practice whatever would pay the best, and at the same time improve the land. Should practice what Prof. Randolph called the Philosopher's Stone: "Pay as you go," and keep out of debt. It won't do to loan from Peter to pay Paul. A man some years since thought he had discovered perpetual motion, and had a vision to the effect that is was "Compound Interest," as it never stopped, and went on night and day. Would that all good farmers were financiers! Some grow good crops, but are at too great expense for the profits. Proper compensation should be first aimed at. All business men should be enthusiastic and proud of their calling; make their estimates and work within them. Industry and vigilance insure success, and inattention causes failure.

Jefferson Co., W. Va. RUSTIC.

Our French Letter.

Effects of Agricultural Exhibitions.

It is not surprising the cordial welcome the agricultural community extends to the proposed international exhibition of 1878. The rural interest reaped incalculable advantages from the exhibition of 1855, but it was almost overlooked in that of 1867. The exhibition of 1855 might be regarded as a "new departure" for French agriculture; it was from the study of the implements there exposed, that farmers were compelled to adopt machinery, and since then progress in this respect has become so great, that the village smith has well-nigh disappeared.—Improved machinery inferred superiorly tilled land, which, in its turn, exacted more manure; hence, the demand for and the commerce in fertilizers. The London exhibition of 1862 was full of valuable lessons. Several French agriculturists seized the occasion to profoundly study the amelioration of the breed of cattle, in point of precocity and feeding. In 1867 the agricultural section of the Paris exhibition was a failure, because it was separated by several miles from the main building, and to which fatigued visitors felt no inclination to repair. Then the manner of holding intermittent shows of live stock—one week, sheep; the next, black cattle; then pigs, &c., and each a different species, required six months to follow the details, and the primary object of the exhibition was lost—that of simultaneous contrast. The same fault was repeated

at Vienna in 1873, but will be avoided in Paris in 1878.

Steeps for Seed Grain.

The question of a steep for seed grain occupies not a little attention; when well prepared it is efficacious against smut and rust, and allows light seeds to be skimmed away. But another object remains to be secured—the uniform and rapid germination of the grain—and to attain this end, a solution of lead is recommended as being superior to lime. Glauber's salts and weak solution of vitriol or arsenic. From experiments made with wheat, barley, oats and rye, in solutions of salts of lead, of copper, and of ordinary water, the seeds treated with the lead preparation not only germinated more uniformly, but also more rapidly.

Remedy for Foot Disease in Sheep.

Veterinary Surgeon Felizet draws attention to the continued success attending the employment of caustic lime for the foot disease in sheep. It is very laborious to touch the feet of a numerous flock of sheep with the usual astringents—solutions of copperas, white viriol, calcined alum, or spirits of turpentine. Instead, form a species of enclosed "run," 15 yards long by 2 wide. Make a well-trodden floor; raise a border with puddled clay round the enclosure, so as to secure the uniform depth of nine inches towards the middle of the run; pour into this bath four barrels of water, and distribute over the bottom 2 cwt. of quick-lime, covering all with a dozen bundles of the refuse fodder from the racks, so as to form a carpet. Drive the sheep into this foot-bath, 100 at a time, and compel them to well pass and repass from one end to the other. The spread fodder prevents the feet sinking too profoundly, and acts as a brush at the same time for forcing the caustic solution to enter the nails. The bath must be made entirely new once a week: as the lime, absorbing carbonic acid, loses its causticity. It is a common practice to wet the straw intended for thatching purposes with a solution of quick-lime; the straw becomes thus more durable, incombustible, along with possessing sanitary advantages.

The Cultivation of Sugar Beet

Has not made new proselytes this spring in the north of France. The quarrels last autumn between the farmers and the manufacturers have not created confidence in the cultivators of the roots. Then the duty is high, and if not unjustly, is vexatiously levied. For the future, the base of the purchase will be the density of the price; and all parties seem contented with this solution. The point now to secure from the government is, that the impost will be levied according to the richness in sugar, just as alcohol is taxed—according to its strength. All parties interested in the raising of beet, agree that the less voluminous the roots the more saccharine it will be; and to reduce the volume, the plants ought not to be too distant. But no axiom can be laid down as to the manure most suitable for the crop; further experience under this head being required. However, it is considered advisable to apply the manure during the tillage of the soil, and before proceeding with the sowing. There is another reason for the pause in the cultivation of beet. Since the roots can be perfectly conserved like chopped green maize and rye, in trenches, for spring feeding, farmers are feeling their way as to whether a heavy crop of roots for feeding would not be more profitable than the smaller return necessitated for the sugar manufactory.

Diseases in Turnips, Cabbage, &c.

The turnips, colza, cabbage, &c., grown on the sandy soils of Belgium are every year more and more attacked by larva, while alluvial and calcareous soils escape. Independent of the period at which any of the plants in question may be sown, as soon as the first leaves appear, the root, if examined, will present an excrescence, that increases with time. If this swelling be opened, numerous white worms will be discovered. Untouched, the ven will enlarge, and the root cease to penetrate in the soil, becoming in time a simple gall, changing to a putrid mass, and bursting when the insects have attained their last stage of metamorphosis. It is conjectured that the malady is produced from the puncture of an insect, and is more prevalent where the soil is well tilled and abundantly manured. Instead of having an average yield of 20 tons of turnips to the acre, not more than ten are obtained. Among the remedies relied upon are: avoiding the use of fresh manure, preferring dissolved guano, urine, and four parts of superphosphate, with two of sulphate of ammonia, and one of sulphate of potash.

Discoveries in Regard to the Phylloxera.

Though every effort is directed to combat the depredations of the vine bug, perhaps most attention is given at present to an exhaustive study of the habits of the insect. M. Balbiani seems to devote his life to the watching of the phylloxera, and his indefatigable application has been rewarded by important discoveries. It is now recognized, that the insect has four specific forms, and develops its eggs in winter, not only around the roots, but on the shoots; some forms are the result of sexual intercourse, and others not. M. Balbiani has detected the insect leaving the egg, during winter, the eggs having been deposited on shoots of the vine; thus the disease is both ærial and subterranean. The Comte de la Vergne coats the stem of the vine with coal tar, and finds the plan prevents the migration of the bug to the branches, and that vines so treated have their leaves, flowers and fruit better than those which have not been tarred; but the process does not ensure immunity from the scourge. The Comte is trying the experiment of steeping green vegetable matter, heath, rushes, &c., in the alkaline sulphocarbonate, and burning the mass around the vine,—thus supplying it with a manure and an insecticide at once.

The Culture of the English Chevalier Barley,

so admirable for malting purposes, has taken this season a great extension in the north and east of France; it yields well and fetches a good price; two pounds of the barley produced about 1¼ lbs. of malt, the latter yielding 53¼ per cent. of extractive matter,—a result that brewers applaud. When more acclimatised, the Chevalier barley will be tried in southern France and Algeria, it being the chief grain employed for feeding horses in these regions.

Refuse of Tan-Yards.

The director of the experimental farm at Lézardeau, draws attention to the neglect extended to the refuse of tan-yards as manure. This refuse consists of two kinds—animal and vegetable. The former is derived from the scrapings and trimmings of the hides more or less fresh, and after undergoing the lime bath; it is rich in phosphate of lime and nitrogen, but loses 30 per cent. of the latter after three months fermentation. As a manure, it suits well light sandy soils, and can also be stratified with farm-yard manure. It sells at the rate of francs 3 to 5 the cubic yard. The vegetable refuse is the used tan, the residue of powdered oak-bark; it is an excellent absorbent, equal to wheaten or oaten straw, and is best employed as bedding for stock. The odor of tan is due to all the tannic acid not having been absorbed, as well as to the production of other acids during the steeping of the hides; urine contains most ammonia when fresh, and the rapidity with which tan loses its acid odor when employed as bedding, is a proof of its efficacy for fixing that alkali.

Pine Plantations

are being attacked by a very destructive insect, the *lophyrs*. Near Antwerp over 200 acres of pine trees have been so destroyed. The cocoons pass the winter in the mass at the roots of the trees, becoming perfect insects in April; the insects then breed rapidly; the female dies after depositing her eggs, and the fly itself does not live beyond thirty days; the eggs are deposited in the incision made by a saw-like auger possessed by the insect, in the longitudinal section of the needle, and in groups of six or eight. The worms in due time appear and gnaw the leaf upwards, and only the one-half of it. A young worm will consume thus three of the spines in a day, and an adult as many as twelve. The trees first attacked are those of a sickly and dwarfish nature, growing on poor soils and on the outskirts of the wood. There is no effectual remedy against this pest, save to shake the caterpillars from the trees, and then destroy them.

The New Bossin Kidney-Bean

is highly spoken of, and its prolific yield makes it an invaluable addition to the farm-garden produce. It is white, easily cultivated, requires a friable soil, and watering if the climate be dry. It runs as high as twenty feet, and is covered with pod from the base to the summit. It can be sown from the end of March till the close of June. If the pods be allowed to ripen, the beans are so tender as to be cooked without difficulty.

Exportation of Horses, &c.

The farmers are commencing to be uneasy at the rapid draining of the country of the splendid Percheron horses, mostly to London and not a few to the States. France promises to be exhausted of this breed, as Belgium has been of her draught animals. On the other hand, France is largely exporting her famous Durham-Charlerris bulls to Germany, and Normand-Berkshire pigs to Italy. Germany, also, is inclined to purchase her crossed merinos. F. C.

Paris, May 4, '76.

General Farming.

Read before the Balto. Co., Md., Farmers' Club, by Edw. O'Donovan.

Almost all subjects pertaining to farm industry have been so thoroughly and ably discussed at our various meetings within the past year, that I feel at a loss to advance any new subject, or argument pertaining to it. The products of this country increase every year; its wealth and industry are contributed to by each county, and all tend towards making the grand total of its products. Our county, possessing as it does the advantage of a kind and genial soil, delightful climate, enterprising population, and the advantages of a large and good market for the various yields of our farms, should stimulate its farmers towards a generous rivalry, and make each ambitious to excel his neighbor in the yields of his land, and all should aim at that higher cultivation so profitably adopted by our Northern neighbors, but frequently sadly neglected by ourselves.

When we hear of one of our friends in our almost immediate neighborhood, realizing twenty-seven and a half barrels of corn on a single acre, should this not stimulate us to excel even this?

The past year has been peculiarly favorable to the farmer; the many advantages in agricutural implements, render his labours less severe, and enable him to dispense with at least half the help which so often consume so large a share of his profits.

The raising of sheep, which would no doubt be the source of the greatest profit to the farmer, has been sadly neglected in this section, principally owing to the want of proper laws for protection from the ravages of dogs, who have always proven their greatest enemies.

But few have reasonable cause to complain of the results of the past year, and we should enter the present with renewed energy, determined to resort to a higher state of farming; each ambitious to excel, knowing that by industry and perseverance almost anything can be accomplished.

An Arboretum at the Centennial.

Mr. Meehan, who is so modest and conscientious that he never allows any notice of his private doings or business to creep into the editorial pages of the *Gardener's Monthly*, in an *advertisement* in that journal invites visitors to the International Exhibition, to examine the Arboretum planted by him on the Horticultural Grounds, the collection embracing nearly 800 species or well-marked varieties, all named for the information of those inspecting it, and believed to be one of the most complete collections of hardy, vigorous plants ever got together in this latitude.

We second the invitation, because we know that such a collection made by his hands will deserve special and careful attention by all lovers of plants.

Mr. Meehan will also exhibit at Agricultural Hall 300 kinds of seeds of trees and shrubs, hardy in the greater part of the United States—a less striking but no less useful display than the other.

The Dairy.

Management of Dairy Cows.

A correspondent of the *Lancaster Farmer* says on this subject: One great error with farmers generally is, not cutting their grass early enough. The difference between hay from young grass and such as is commonly made is so great, that it is surprising that it is not better understood. Corn sown at intervals, to be cut and fed when pasture runs short, is of great value to keep up a regular flow of milk, and any that is not needed will, when cut and well-cured, be far superior to common corn-fodder. The latter is poor feed for milk cows, unless it be cut and steamed or scalded, adding to it whatever grain is fed at the time. Corn meal and shorts or bran, with some oil-cake, contain elements necessary to produce the best results. Without roots of some kind, however, the store of feed is not complete for winter feeding. Grooming and feeding are as important to the cow as to the horse. Noisy boys or unruly curs must not be allowed to worry cows, but instead caress and keep them quiet.

The prevalent custom of feeding well when fresh and only half when dry has injured many cows. It is, at best, a very short-sighted policy. The best milkers generally run down in flesh during the milking period, with the best feeding, and if not fed well when dry will always be poor. Feeding should be regular whether fresh or dry, so as always to keep up her vital stamina so that when the calving period arrives, instead of being exhausted she will be invigorated to pass the critical period safely and without being affected with hollow-horn and other diseases incident to exhaustion. Farmers and dairymen who feed their cows well and regular the year round scarcely ever find any difficulty with hollow-horn, the latter being only another name for hollow stomach and hollow chop-chest.

Protection from the hot sun in summer is as important as from snow storms and cold blasts in winter, all of which disturb the regular flow of milk. A shed or cool stable to turn them in for a few hours during the greatest heat of the day, even without any feed, is far better than panting in the hot sun over the best of pasture. Where the soiling system has been adopted, the case, of course, is different. Whether the latter is preferable to pasturing is still a mooted question and depends very much on circumstances. Where pasture is thin and short it is no doubt preferable to pasture, but heavy grass of any kind it is economy to cut and haul to the racks or mangers, for in the latter case one acre will feed as far as three if pastured. Cows are sometimes inclined to eat foul garbage and rubbish, and drink stagnant water or liquid manure, all of which seriously injures the quality of milk and its products. It is, therefore, equally important that pure water only is provided for drink, as well as proper food. The prevalent custom with farmers of cleaning out their cow stables once a week, instead of once or twice a day, is at best but filthy and slovenly and seriously affects both the cow and her milk.

When should Cows of a Butter Dairy Calve.

An experienced dairyman says, if you have a plenty of early cut hay to feed, with a little grain, and you want to make the most milk and butter you can, the first of February is the best time of the whole year for his cows to calve. He found cows that calve in the winter, if fed with all the early cut hay they will eat night and morning and are fed from two to four quarts of shorts, and half as much meal per day, scalded and given warm in water, will give as much milk in winter as in the summer in good pasture. He contends that "by having them calve the first of February and feeding as indicated, we can obtain a large flow of milk, which, if properly handled, will make excellent butter, and after three or four months of barn feed, when they begin to shrink a little, we have the flush feed of May and June to turn them into, which will increase their milk again. Then, in the fall we have our fodder corn, pumpkins, cabbage and root tops to feed, with which to keep up the flow of milk until winter sets in, about the last of November, when it will be time to dry them off, so they may go dry two months, which will bring them around to the first of February again. I find that cows that calve in the winter or spring will invariably shrink when winter sets in, and it is hard to keep up a satisfactory flow of milk in the short, cold days of December, and what milk we do obtain will not make as good butter as milk from new milch cows; the butter globules are small and the butter often will not come until after a tediously long spell at churning. The cows that calve late in the spring will not give much more in the fall months than those that calved in the winter, and both will dry off nearly together. I am satisfied from my own experience, that by this system I can obtain one-fifth more milk in the year than by the old system of having the cows calve in April or May."

Butter and Cheese Making.

The quantity and value of the butter and cheese imported into the United States in the year ending June 30, 1875, for consumption were:

	lbs.	Value.
Butter	1,199,620	$319,470.72
Cheese	3,120,112	518,357.59

Export of dairy products to foreign countries during the year ending June 30, 1875:

	lbs.	Value.
Butter	6,3[illegible],827	$1,506,998
Cheese	101,010,853	$13,659,603

Not many years ago we imported more cheese than we exported; while the returns of the last fiscal year show an excess of exports of nearly one hundred million pounds, worth $13,141,246 over the cost of the cheese imported. At a late meeting of the National Butter Association, Mr. D. Richards, of Chicago, read a paper on marketing dairy products, in which he estimates the dairy cows in the United States at thirteen million, and the average of cheese per cow at 350 pounds, so far as their milk is made into cheese.

Live Stock.

Value of Sheep for Enriching Land.

Some fifty years ago Anderson said:

One thousand sheep folded on an acre of ground one day, would manure it sufficiently to feed one thousand and one sheep; so that, by this process, land which, the first year, can feed only one thousand sheep, may, the next year, as a result of their own droppings, feed thirteen hundred and sixty-five.

Sprengel allowed that the manure of fourteen hunded sheep, for one day, is equal to manuring highly one acre of land, which is about four sheep per year. Mechi, a still more recent authority, estimates that fifteen hundred sheep, folded on an acre of land for twenty-four hours, or one hundred sheep for fifteen days, would manure the land sufficiently to carry it through four years' rotation. In the United States, much less attention has been paid to this item of profit to be derived from the flock. Only upon the poorer lands, and then only from the exceptionally few close observing and calculating men, do we meet with any notice of it at all. Not so in England and France, where the necessities imposed by density of population, and consequent enhanced value of land, compel recognition of every minutia of profit by the cultivator of the soil. There the feeding and grazing of sheep enters into the system of rotation with invariable regularity. Without the sheep of England to-day her agriculture would be a failure. Their value to English agriculture is to be found in their manure. Though not of themselves profitable, they make it possible for other branches of agricultural industry to become so. Professor Coleman, of the Agricultural College at Cirencester, once said:

It is not difficult to show that sheep alone, apart from their influence on the corn crops, will not pay a living profit after all the expenses of growing the crops are considered.

M. Thiers says:

The agricultural industry of France cannot dispense with sheep.

Science has lately made the gum washed from fleeces at the factories contribute to the fertilization of soils. Mr. Hayes tells us that the French chemists, MM. Maumone and Rogelet, have established very recently at the great seats of the woolen manufacture in France, as at Rheims and Elbeuf, factories for putting the new industry which they have created into practical operation. They induce the woolen manufacturers to preserve and sell to them the solutions of yolk obtained by the washing of the raw fleeces in cold water, and pay such a price as encourages the manufacturers to wash their wool methodically, so as to enrich the same water with the yolk of a number of fleeces. These scourings the chemists carry to their factory and there boil them down to a dry, carbonaceous residuum. The alkaline salts remain in the charred residuum, and are extracted by lixiviation with water. The most important of the alkalies obtained is potash, which is recovered in a state of great purity. It is computed that if the fleeces of all the sheep of France, estimated at 47,000,000, were subjected to the new treatment, France would derive from this source alone all the potash she requires in the arts; enough to make about 12,000 tons of commercial carbonate of potash, convertible into 17,500 tons of saltpetre, which would charge 1,870,000 cartridges.—*National Live-Stock Journal.*

The Value of a Pedigree.

The benefits of being able to present an authentic evidence of the purity of the blood of an animal is thus set forth by a writer in the *Massachusetts Ploughman:*

I find my "registered Jerseys" command double the price that my unregistered ones do, although among the latter are some noble animals, just "as valuable for my purposes—a butter dairy," as if they had all the blood of "all the Howards," and a pedigree as long as the family whose ancestors owned their own boat in Noah's time, and would not demean themselves by going into the ark with his miscellaneous crowd.

Any one who has read Hammerton's "Round My House," will appreciate the inestimable value of the "de" before a family name in France, where that "preposition" determines the "pedigree standing" of the possessor, and has more weight in the social scale than money or official rank, and wins more hearts than either of those more substantial advantages. A thorough title to an estate, or complete pedigree of an animal, has the same value in kind to a would-be purchaser, and the English and American Shorthorn Herd Books give a real value to the animals recorded in them; and as Mr. Hardin, of Kentucky, says, "the publication of the Herd Register of the Jersey Cattle Club gave prices a new impulse," for several reasons, the principal of which were that the pedigrees could easily be ascertained, and the breeders and purchasers had confidence in the manner the Register was got together and conducted. The committee appointed at the recent meeting of the Massachusetts State Board of Agriculture, to consider and report upon the questions: "What *constitutes* a pure-bred animal," and "how shall an animal be proved to be pure-bred?" performed their duty in this case. They reported that in their opinion the term pure-bred is regarded by intelligent breeders and the public generally, as applying to such animals only as have been so bred that they can transmit with certainty their peculiar qualities to their offspring.

The proof that the animal is so bred should be a record of the animal or its ancestors, as recorded in some herd book *recognized by leading breeders and the public generally, as complete and authentic.*

Stables.

If there is anything, says the *Rural Carolinian*, that is an eye-sore to humanity on a Southern farm, it is the average Southern pen, den, hole, or box, called a stable. An open log house, most frequently built in a low portion of the yard to catch the drainage, and with the entrance so low as to injure the horse's withers by bruising as he is forced in and out, is in thousands of cases a sample specimen of a plantation stable;

and, frequently, we have been surprised to find such buildings without even a door,—a couple of rails, perhaps, serving the purpose of keeping the animal in. We would never drive a fat horse or mule unless we had a lock on the stable door, for though we usually feed the stock ourself, we seldom stand hard by until they eat up the bait; and if we feed at dusk and turned our backs, we are suspicious enough to believe that there would be some two-legged animals feeding out of that trough unless there was a lock on the door.

But, in our April number, we promised to say something occasionally about farm buildings. To those who are able to build ornamental affairs, we say employ an architect. We write for those who have to do the work themselves, or superintend its being done. And we will only speak of a log stable, presuming that where framing timber and plank can be had, they will probably be preferred and can be used.

We believe it is good economy, and the part of wisdom now-a-days, to keep no more than three mules or plough animals, with their long forage, in any single building. Loss from fire, lightning, theft, or any cause, suggests this idea. This building we would erect as follows: A log house, eight feet high to the plate, eleven feet wide, and thirteen feet in the clear, and divided by a log or plank partition in the centre, so as to make the stalls eleven by six and a half feet in the clear. Parallel to this house, and twelve feet from it, build a second log house exactly like the first. Cover the two houses under the same roof, the ridge pole running across the two houses and passage, so as to give a loft thirteen feet wide at the foot of the rafters, and thirty-four feet long. This loft properly packed will hold all the provender, oats, fodder, or hay, that three animals will eat in a year.

Close up the twelve-feet passage by two latticed gates,—one bolted inside and the other locked outside. To give more loft room, this passage might be made fifteen feet wide, and the gates simply large enough to admit a wagon, or any vehicle, for sheltering purposes.

Cut a door, three feet wide and six feet high, in the corner of each stall, opening into the passage, and let the door, when hung, open towards the gate that is locked on the outside. These should be slatted doors, and fastened with latches fifteen inches long, one inch thick, and two inches wide, secured loosely to a door-slat by a bolt-pin or screw through one end, so that when the latch is lifted and the door opened, the latch will fall to a perpendicular position, on or against the slat to which it is bolted, and thus prevent the possibility of swagging, as the mule is slapped with the bridle, as he almost invariably is, and made to jump hurriedly into the stall.

We prefer a trough and rack to a manger. These should be just high enough to enable the animal to eat in a horizontal position while eating from the trough, and the rack about one foot above. They should be each three and a half feet long, and placed immediately to the right or left of the door as you enter the stall, so that when the animal enters the stall he will have to turn round to get his food. Thus all the feeding is done from the passage into both trough and rack, and a child may feed a vicious animal without danger of being injured.

But there are four rooms; three of them we would convert into stalls, and the other, nearest the locked gate, should be floored, and contain a stairway or ladder to the loft. By throwing all the fodder, oats, or hay, down into this room, nothing is lost. The loose bundles, or shattered grain, can be easily gathered up and put in the racks, or swept up and fed to the calves and pigs. In this room, too, can be kept the plough gears, plough irons, and plantation tools.

The gable ends of the loft should be securely weather-boarded, except a door in each gable, to fasten by a hook on the inside.

If the logs of these houses be hewed, or made to fit as near air-tight as possible, so that neither light nor air can enter but from the passage, these stalls will be comfortable at all seasons of the year. A single key locks up the three mules, their provender, the tools, the implements, and the wagon which, when not in use, stands in the passage out of wind and weather. There is not a three-mule farm in the South in which this stable cannot be built without an appreciable cost, save the labor. And two of these can be built with less cost, less labor, and serve a better purpose than one building large enough for six mules.

Hog Cholera.—Hon. Maurice Kelly, at Liberty, Adams Co., Ill., who is one of the most successful hog-breeders, says he has never had this dreaded disease among his hogs, although it has been for the past year constantly raging in his neighborhood. He prevents it by the use of the following mixture: Say for 50 hogs take one pound of copperas, sulphur, black antimony and a half pound of saltpetre, a quart of salt and a gallon of ashes, mixed in slop, given as often as is necessary; if the disease is raging badly near by, give once a week.—*Western Agriculturist.*

Poultry Yard.

A Poultry-House for Fifty Fowls.

A correspondent of the *Canada Farmer* gives the following plan for a poultry-house for fifty fowls:

To build a fowl-house, choose a site that lies high and dry. Get some cedar posts, eight feet long, such as are used for fencing. Dig holes in two parallel lines, seven feet apart, three in a row, from east to west, and two feet deep, so that each post will be seven feet distant from the next to it. Then sink a seventh hole between the two at the east end. Put in your posts, and lay a fourteen-foot scantling, two by four inches, along each row, nailing fast to the posts. Across these lay six other pieces of similar scantling, from north to south, one at each end, and the remaining four at equal distances between the ends. This will give you, when the roof is on, an open loft, which, during the summer, can be used for a roosting place for your chickens. Next lay on the roof, like an ordinary cottage roof, to fall both ways. Nail inch boards on the outside. Hang your

doors on the seventh post. Put in a sash, with very small panes of glass, at the end opposite the doors. Put up your perches, letting them run from north to south. They should be made of three strips of inch wood, nailed together in the shape of a triangle, Λ, with a hole through right down the centre. They are to be fastened in their places by nailing two strips to the siding in the form of the letter V, but at somewhat more acute angle than the perch, so that by pressing it downwards the perch may become wedged. Adjusted in this manner, the perches may be removed, at pleasure, and if, on their occasional removal, boiling water be poured through them, it will most effectually destroy lice, which, unless attended to, would soon stop your hens from laying. Don't paint or oil these perches. Let the nests lie against the two sides of your pen on the ground. They should be built in pairs. Cut a piece of twelve-inch board, thirty inches long, for the bottom; one piece two feet long for the front; and one piece eleven inches wide, and beveled in length from eighteen inches behind to twelve inches in front. Lay the bottom piece on the ground; nail the front piece to it; then divide it in the middle by the eleven-inch piece, putting the eighteen-inch end against the siding, and the other to the front. Then nail a second strip at each end, to prevent the hen from scratching out the nest. Next cover it over with a board, on which you have previously nailed two strips. This will assist heavy hens in reaching the perch, and also prevent the droppings from getting into the nest.

Light Brahmas and Houdans.

A correspondent of the *Country Gentleman* writes:

"The above-named breeds have proved most profitable to me. Their characteristics are too well known to need description. We usually keep an equal number of light Brahmas and Houdans, and all are pure-bred, always breeding from the best, and usually nothing but the best Houdan cocks. We thus obtain two classes of chicks, pure-bred Houdans and Brahma-Houdans. The first we esteem most highly for laying, the last for table use, as they are hardy, rapid growers, and grow to a great size, combining the size of the Brahma and the fine, firm texture of the Houdan. The cross thus formed has as good laying qualities as either breed, being for the most part non-sitters; but they should in no wise be bred from as their progeny loses the good qualities of the parent stock.

"Breeders will always have their favorite fowls, but I, as a common farmer, from experience, observation and inquiry have come to the conclusion that the light Brahma is the best Asiatic, and the Houdan the best French fowl now bred."

THE AMERICAN JERSEY HERD-BOOK, 5th volume, is now in course of compilation, a work that was begun in 1864 and is maintained in the interests of Jersey breeders, upon an equal basis, under the supervision of a U. S. Advisory Board of prominent breeders. Address O. B. Hadwen, of Worcester, Mass.

Horticulture.

Report on Fruit for Maryland.

Made to the American Pomological Society, and published in its proceedings.

P. BARRY, ESQ., *Chairman*
General Fruit Committee:

Dear Sir—Had the necessary information from experienced fruit-growers in our State come earlier into my possession, this report of the progress and extent which fruit culture in Maryland has reached would have been forwarded sooner.

Maryland, in her geographical position, the fertility of her soil, mildness and uniformity of climate, embraces one of the finest fruit-growing regions of our whole country. By this we refer more particularly to what is known as our Eastern Shore Counties, bounded on one side by the Chesapeake Bay and on the other by part of the State of Delaware, where the peach and pear may be said to have found their homes. The soil of this Maryland tract is generally what may be termed a light loam, and therefore easy to work. It is computed that about sixty thousand acres of this is planted in peach trees, and the marketable yield the present year of this fruit is estimated at five millions of bushels. The fruit begins to ripen about the middle of July, and continues until the first of October. Some of these orchards are over twenty years old, and still continue in a healthy condition. The stimulants used thus to maintain the trees are liberal applications of barn-yard manure, or to the extent of one thousand pounds of ground bones to the acre. Sometimes muriate of potash and other fertilizers are applied, while the surface of the ground is kept open by frequent plowing and harrowing during each season; judicious pruning and shortening-in being considered essential to the healthy condition of the orchard. The usual remedy for the peach-borer, or worm, is to use the knife freely and then apply a shovel-full of slacked lime on the surface in close contact with the tree. Some seasons the Curculio does great damage to the fruit. To prevent this no remedy has yet been found. With regard to what is called the "Yellows," a few of the more intelligent growers attribute it to the action of an aphis on the roots, and is considered by some to be the Grape-Vine Phylloxera, although some entomologists call it the Aphis Persica. These insects, though small, make sad havoc on the roots, and their presence underground is made very evident by the yellow and sickly appearance of the leaves, and on the few that have been examined by myself the insects were found following out and destroying the healthy bark to the extreme points of the rootlets. Our intelligent and most extensive peach-grower, Col. Edward Wilkins, of Kent County, is now carefully investigating the character and habits of this destructive pest, and from him we expect such information as may lead to measures calculated to put a stop to its ravages. An opinion prevails almost universally among our orchardists, that of late years the season of ripening of many kinds has ma-

terially changed. Those peaches which used to ripen late now come in with earlier varieties, thereby occasioning frequently a glutting of the market. Some attribute the cause to an indiscriminate use of seed for stocks got from the preserving estalishments, or to the small and weak hog or natural seed procured in Virginia, and my friend Col. E. Wilkins thinks this evil can be obviated by budding "Early Yorks on Early Yorks and Smock on Smock stocks."

PEARS.—Within the last few years the cultivation of this fruit has very considerably increased, and very extensive orchards, some of them embracing four thousand trees, now in a bearing state, are to be found. As a general thing Standards are preferred; but on our Eastern Shore, Dwarfs are more grown than in the upper counties, and there bear very heavy crops. Mr. R. S. Emory, of Kent county, writes me that the present season from one-half acre of *Dwarf Bartletts* he marketed four hundred crates of prime fruit; and as a general thing good pears, if properly handled, remunerate the grower well. The greatest drawback to the cultivator is blight, the cause of which no one can tell; neither has a remedy been found out.

APPLES.—Apples are not grown extensively, as only the very superior early and late kinds are remunerative. Cider being less in demand now than formerly, the ordinary kinds do not pay for the trouble of marketing.

PLUMS.—Plums are nowhere cultivated in our State to any extent, and except when planted on the edge of a pond or lake of water, or in a poultry-yard, are attacked by the Curculio, and the only plums that these Turks would pass untouched was the *Blue Gage* and *Purple Damson*; but within a few years back the Black Knot in our upper counties has destroyed the majority of the *Damson* trees, so that there is now a great demand for young stock of that kind.

CHERRIES.—The *Early Richmond* is the popular market sort, being known almost by every one; but such kinds as *Reine Hortense*, *Belle Magnifique* and *Imperatrice Eugenie* are gradually coming into favor. Of the *Bigarreau* kinds the *Governor Wood* and *Black Tartarian* stand high. The Black Knot appears to be the only disease to which they are subject, although frequently a Black Aphis attacks the end of the young shoots in the early part of summer.

HARDY GRAPES.—The majority of grapevines in Maryland have been planted more with the view of producing fruit for the table than for wine-making. Only a very few vineyards have been set on foot for that purpose, for which the kinds selected consist in a great measure of *Ives Seedling*, *Clinton*, *Catawba*, *Delaware*, and *Concord*,—the two last being the most popular kinds grown.

We append a list of fruits that have proved to be well adapted for our State, arranged in accordance with the Society's programme and placed in succession as they ripen:

PEACHES.—*One Star.—Early Troth's*; profitable as a market fruit. *Stump the World*; large, of medium quality. *Pine Apple*, *White Heath Cling*, *Salway*.

Two Stars.—Early York, good for table and marketing; *Early Crawfords*, one of the most profitable; *Reeves' Favorite*; *Oldmixon Free*, much sought for preserving; *Crawford's Late*, in high esteem for marketing; *Silver Medal*, popular here and in Delaware; *Keyport White*; *Beers' Smock*, the most profitable grown.

Dagger.—Early Beatrice; promises well. *Early Louise*. *Early Rivers*; flavor high.

PEARS.—*One Star.—Manning's Elizabeth*; a great bearer, fruit small, yet profitable. *Clapp's Favorite*; a fine grower and good bearer, but fruit inclined to rot at the core. *Flemish Beauty*; rots at the core and sheds its leaves before the fruit is ripe, still it is worth growing. *Vicar of Winkfield*; good bearer on both Dwarf and Standard, much grown.

Two Stars—Tyson; one of the very best, but tree long in coming into bearing. *Beurre of Giffard*; in some localities the fruit is liable to crack. *Bloodgood*; high flavored, and much esteemed. *Bartlett*; the most popular of all pears. *Howell*; an early and good bearer on Dwarf or Standard. *Beurre d'Anjou*; one of the very best pears, grows, bears and eats well. *Sheldon*; is all that can be desired. *Bergen*; this is gradually growing in favor. *Duchess d'Angouleme*; on dwarf very reliable. *Seckel*; good everywhere. *Lawrence*; does well all over our State.

Dagger.—Andrews; promises so far to do well here. *Mount Vernon*; this, so far, promises well. *Triomphe d' Jodoigne*; a fine grower, fruit of high flavor. *British Queen*; fruit large, flavor high, keeps well, tree rather a poor grower. *Dana's Hovey*; tree a fine grower and coming into bearing early—fruit high-flavored.

NOTE.—The *Doyenne Boussock* and *Swan's Orange* do well in some localities, and we think the last when better known will become a popular market fruit.

APPLES.—*One Star.—Early Harvest*; a moderate bearer, fruit excellent. *English Russet*; does well on warm land. *Long Island Russet*; an early and abundant bearer. *Peck's Pleasant*; flavor good, requires only to be more generally known. *Robertson's White*; an abundant bearer. *Summer Rose*; a delicate fruit for table, not much grown.

Two Stars.—Astrachan Red; bears well only on aged trees. *Drap d' Or*; the only objection to it, the trees grow slowly. *Jefferis*; in some counties does well. *Rawles' Genet*; a good bearer and keeps well. *Summer Pippin*; one of our best early apples. *Smith's Cider*; the most profitable sort grown here. *Smokehouse*; highly esteemed and widely disseminated. *Tulpehocken Pippin*; (Fallawater,) tree good bearer, fruit large—much grown by our farmers. *Tewksbury Winter Blush*; a good bearer and keeps long. *York Imperial*; this and *Smith's Cider* are the two leading apples of Maryland.

Dagger.—Alexander; so far this promises to suit here.

Very respectfully,

W. D. BRACKENRIDGE.

Rhododendrons—Camellias.

Editors American Farmer:

If memory serves, something has already been said upon the subject to which I wish to draw attention; but as you usually give small doses, it will bear repeating.

It *is* a fact fully well understood that when it is desired to get an agricultural, horticultural, or

an arboricultural idea before the public, it is necessary to introduce it by degrees, and "keep pegging away"—a kind of Homœopathy boiled down and the real intention hidden by a sugar-coating of romance. Fortunately, practical men are not, generally speaking, much given to flashy rhetoric.

We would like to know for what reason the Rhododendron is so little understood and less used? It is the most beautiful, hardy evergreen known, indigenous to this zone. Another plant, very beautiful also, were it not so common—the Kalmia latifolia, or Sheep Laurel. As both of these plants require the same general conditions, what is said of one is equally applicable to both.

The Rhododendron will not flourish on sharp gravelly soil, nor on soil containing lime in any considerable quantity; neither will it bear full exposure to the sun in our hot dry atmosphere. If we notice the Rhododendron and the Kalmia in their natural habitation, we shall find them on the north side of mountains; sometimes with very little foothold—in fact, so little root do they make, that the writer has had fine, handsome plants two or three years planted, which might and have been easily lifted by the hand and replanted without injury; although, of course, all such treatment should be avoided. Peat soil, when good, is useful, but not essential. The finest collection of Rhododendrons we ever saw is at Wobourn Abbey, in England, the country seat of the Russells. If any of your readers know of a finer or a more complete collection, I would esteem it a favor to be informed through these pages. The soil being in this place too sandy to be called sandy loam, and is classed under the somewhat loose definition of sandy land. At other places we have seen them growing splendidly in a fine loam side by side with Auraucaria Imbricata, Picea Nordmaniana, P. Nobilis, P. Pinsapo, and other choice resinous and evergreen plants, all in the most healthy, thriving condition.

And just here, Messrs. Editors, I would like to digress a little and speak of another plant—the Camellia. Mr. Pearson, by-the-by, the raiser of some of our finest Geraniums,—as Arthur Pearson, &c.,—grows his Camellias in pure loam, without any mixture of any kind, so far as we could understand; and a finer, healthier lot of stuff we have never seen.

Now for the wants of the Rhododendron: *They must not be planted deep, nor on gravel nor lime.* They should be planted on the north side of a hill, if convenient; if not, in a position as near meeting these requirements as possible:

The midday sun should not fall upon them; and they should be mulched with half-rotten leaves, or well supplied with water—not stagnant—when making their growth. Perhaps the month of May is as good as any season in which to transplant them; although we have removed them in almost every month in the year.

The above points are what we consider the essentials of Rhododendron culture, and we frequently see places—suburban residences, near-by drives, &c.—where even a small clump of this beautiful hardy evergreen would look magnificent when in flower, and good at all times. Nor is the price so high for tolerably good varieties as to deter proprietors from purchasing.

Happening in at the Rosedale Nurseries at Govanstown the other day, we saw a fine lot recently imported, which called the writer's attention to the fact that we are most undeservedly neglecting this—in ornamental shrubbery—most useful plant. N. F. F.

[The culture of the Rhododendron is steadily advancing in this country. In the vicinity of Baltimore, several gentlemen have fine plantations. President Perot has several hundred planted out on his place on Charles-St. Avenue, where they are just now about coming into full bloom and are an object worth going a considerable distance to inspect. We recently had the pleasure of seeing a bed of these plants at Mr. August Hoen's, on the York road, the flowers on which were large and beautiful.

We think an impetus will be given their culture by the displays made of them on the Centennial grounds at Philadelphia. Mr. Waterer, of England, an extensive grower of them, and M. Van Houtte, of Belgium, have each large spaces of ground planted out with them,—the number of those exhibited by Waterer being several thousand. In the first ten days of June, they will be in their grandest condition, and make a show such as has probably never been seen in this country—although in England and Continental Europe they receive the popular name of "American plants."—*Ed. A. F.*]

Maryland Horticultural Society.

The May Exhibition was held in the concert hall of the Academy of Music on the afternoon and evening of the 19th. The display of plants and flowers was hardly as large as was expected, but the specimens themselves were considerably above the average seen at the monthly shows. President Perot, Messrs. W. W. Spence, Jno. E. Feast, Andrew L. Black, and James Pentland, especially, had effective tables, a number of handsome and stately plants on each contributing very largely to the effect of the show. Mr. W. F. Massey's Seedling Geraniums, "President Perot," "Snow Bird" and "Persiphore"—all very large and handsome flowers—received considerable notice, and were given special mention by the judges. Coming at a busy season, many of the commercial men were absent; among these, John Feast, Robt. J. Halliday, T. Fairley, A. Brackenridge; and of the amateurs, Captain Snow and others, usually exhibiting. The attendance was large until the close of the exhibition. The following awards were made:

PROFESSIONAL LIST.—Best 6 Fuchsias, $3, Andrew Patterson; best 6 Petunias in bloom, $2, James Pentland; best 12 Roses in pots, $3, and best 12 Pelargoniums, $4, Andrew Patterson; best 12 Zonal Geraniums, $6, and best 6 Variegated Foliaged Geraniums, $3, James Pentland; best collection of 12 Greenhouse Plants, $5, James Pentland; best 6 Ornamental Foliage Plants, $3, Andrew L. Black; best 24 varieties Hardy Flowering Shrubs, $3, W. D. Brackenridge. The seedling Geraniums of W. F. Massey, and the collection of Tulips and Cut Roses of Jno. E Feast, were highly commended.

AMATEUR LIST.—Best 3 Fuchsias, $3, E. Whitman; 2d best do., $1, R. W. L. Rasin; best 3 Petunias, $1, E. Whitman; best 24 Cut Pansies, $2, Charles L. Kemp, Jr.; best 3 Pelargoniums, $2, Prest. Perot; 2d best do., $1, Mrs. Isabella Brown; best Single Specimen Pelargonium in bloom, $2, Mrs. Isabella Brown; best 6 Zonal Geraniums, $4, Prest. Perot; 2d best do., $2, E. Whitman; best 4 Variegated Foliage Geraniums, $2, E. Whitman; best collection Greenhouse Plants, $5, Prest. Perot; 2d best do, $3, R. W. L. Rasin; best 12 Bedding Plants, $2, E. Whitman; best 12 blooms Hardy Flowering Shrubs, $3, A. Hoen; best basket of Flowers, $1, R. W. L. Rasin; best 6 Roses in pots, $3, A. Hoen; best Calceolarias, R. W. L. Rasin; Azaleas, exhibited by Chas. A. Oakford, specially commended.

The regular meeting in the evening was very slimly attended, having been held in an anteroom, the main hall being too crowded to give accommodations for it. No business was transacted. After the reading of the awards, Mr. A. Hoen presented a preamble and resolution, looking to action by the Society, designed to influence the City Council of Baltimore to accept the proffered gift under certain conditions, of a piece of land on the north of the city to be known as Homewood Park. Some discussion was evoked but it was agreed that while the subject was one upon which it was eminently fitting and proper the Society should speak, yet the small attendance at the meeting seemed to suggest its postponement until the next meeting, when it will probably be again taken up, should the matter not have been previously disposed of by the city authorities.

Mr. John Saul's Establishment.

Persons with horticultural tastes who visit the public gardens and grounds at Washington, do not see all in that line worth their attention at the Capital. Mr. Saul's nurseries and greenhouses on the Seventh-St. road, just beyond the city borders, well deserve notice; and though, as a commercial place, it does not show specimens such as are found in the Experimental and Botanic Gardens, its great collection of almost every class of plants is very interesting. From a modest beginning to have gained its present proportions, reaching in its business the whole continent, is itself a testimony to Mr. Saul's capacity, industry and skill. Such, at least, was the impression made upon us at a recent visit to that gentleman's place.

Newly introduced plants are the great specialties here, and the houses contain at all times many rare, curious and beautiful examples of vegetable growth; and the demand is almost incredible for bedding, greenhouse, hothouse and hardy plants. In Geraniums, for example, house after house and frame upon frame seemed so filled with them, that their names alone would almost make a catalogue, and the flowers themselves would, to the novice, show many "a distinction without a difference." The collections of Pelargoniums, Roses, Fuchsias, Dahlias, Begonias, Lilies, &c., are of like immense proportions, while in one house, 200 feet long, one side was entirely filled with double White Chinese Primroses, mostly the *Mrs. John Saul*, originated here, with others of even superior merits, not yet sent out. In Ferns and Selaginellas the display is very handsome, and the same is true of the collections of Marantas, Dræcenas, Allamandas, Crotons, Alocacias and Caladiums, the varied foliage and forms of which would set an enthusiast wild with delight.

Mr. S. finds a growing taste for Palms, and is extending his cultivation of these superb plants to meet it. The same holds so far good of Orchids that he is contemplating the erection of a house where special culture can be given that interesting class, in which his houses are becoming richer every season—he having received, only a short time before our call, a large number of species just brought into the country.

It is not, however, our intention of attempting to give any detailed account of the resources of Mr Saul's houses, which surprised us in their extent and variety, but only to mention one or two other noteworthy specialties impressing our attention. One of these was the Clematis, which, with the Rhododendron, seems just now especially in floricultural fashion. These are propagated here in great numbers, and their distribution to all quarters would seem to indicate that the taste is yet far from satiated with these varied, beautiful and perfectly hardy climbers. Comprising now almost every color they are capable of forming of themselves, in variety, a flower garden in bloom from early spring to late autumn.

When our friend Saul finds the time from the very pressing demands of his business, to fulfil that half-promise of his to contribute something to our horticultural pages, we do not know but that after he tells us something of the newer and most promising pears, which are destined to suit our latitude and soil, he could find a subject which would more interest us and the readers of the *American Farmer*, than an epitome of his experience with the Clematis, a plan of treatment, list of best varieties, and especially their adaptation to make in our conditions such perfect bedders-out as they do in England.

Another plant, (not a new one, though there are some wonderful improvements on the sorts of our grandmothers,) which is amongst the most called-for in his lists, says Mr. Saul, is the Oleander—*Nerium*, in variety. Easy of management, readily kept over winter, it main-

tains its well-deserved popularity. So much for true merit.

Another plant which *ought* to be popular, from its beauty, its floriferousness and rich exotic fragrance is seen in one of these houses in great perfection, covering the entire roof, and filled with blossoms—it is the *Stephanothus floribunda*—a climber, requiring considerable heat. The flowers have a waxy appearance and look like a product of art rather than of nature, their substance thick and fleshy; the foliage hardly less beautiful, being substantial and leathery. Those who do not know this plant will thank us for recommending it to all who have a place warm enough to grow it.

Mr. Saul's houses are varied in style and design according to the uses to which they are put. A very neat and convenient ridge and furrow house for Camellias, &c., heated by hot water, is open all through, allowing the freest circulation of air. A well-protected slope gives an admirable situation for a hill-side house, and in several propagating houses the pathways are dug out of the soft rock, the heating tanks resting on the same material, so that the space to be heated is reduced to the minimum.

Our limits do not admit of more details, and indeed we have stopped so long in the plant houses, little space is left us for the out door department. Mr. Saul's nurseries for fruit trees are some miles further out, and we did not see them. His place on the 7th St. road comprises some 80 acres entirely occupied with ornamental trees, specimen orchards, small fruits and flowering plants.

Particular attention seems paid here to the Pear, and a fair trial is being made of many of the recent French and Belgian varieties. The trees are all looking healthy and loaded with fruit.

Along the road-side are fine specimens of evergreens, all allowed to grow in natural form without pruning or trimming, so that persons selecting may know what the stock from the nursery rows will probably produce. An admirable feature here adopted is the conspicuous labelling of all specimens. This is doubtless very satisfactory to visitors, who are thereby enabled to make notes of what pleases their eye, and likewise saves much trouble to the proprietor and his assistants in answering the questions of the curious.

To one effective feature at Mr. Saul's we will allude by way of closing. Against the walls of his office and packing house—brick and roughcast—have been trained a number of varieties of Ivy; and the effect produced is at once beautiful and striking. Some are more robust growers than others; some are variegated, almost white; others of the deepest richest green; and the combination and contrast enhances the beauty of all. Most of the growth now reaches the eaves, so that the wall is almost hidden by this lovely draping. The inquiry suggests itself, why on rural buildings to which it is so much more appropriate, enduring and beautiful than paint, this natural covering is not more frequently resorted to; and why in cities the naked walls of churches and other public and private buildings should not be thus adorned and protected?

High Condition of Trees Detrimental to Fruitage.

Messrs. Editors American Farmer:

There is not much danger of this plethoric condition of trees in most orchards. On the contrary, as a general thing, our orchard trees are more frequently starved and injured for want of food and culture.

It sometimes happens, however, that some of our trees that should be most valuable, remain year after year without fruit. The only cause aside from poverty, known to us, is extreme redundancy of sap and juices, produced by high culture and over-feeding. This cause of barrenness affects animals also, and the remedy in either case is reduction of food and stimulants.

A friend of ours, blest with a rich congenial soil, has a fine young orchard. The trees had been planted some ten years, and yet, but little show of fruit. By allowing them time to continue growth and approach maturity, they have gradually come into bearing, and the last specimens were very large and fine.

By waiting, the compensation in the way of growth is an equivalent offset for loss of time, and pays in the increased size and capacity of the trees to produce large crops.

But some trees in an orchard may persist in and continue their barrenness. In their case the following directions may be generally used with success:

Root-Pruning.—Mr. E. A. Riche, in *Rural World*, gives the following directions, which, in the main, we reproduce and believe to be correct. He uses this remedy for *pear blight*, which occurs when the trees begin to bear, with never-failing success.

"Root-pruning can be done at any season of the year; but it is easiest performed in spring. The earth is then saturated with moisture, and is easily dug. Trees of three or four inches diameter (apple or pear,) should have their roots cut off from fourteen to eighteen inches from the trunk, [too near the stem,] and two and two and a half to three feet deep, [deeper than necessary, the roots of trees of that size never spread two feet below the surface.] Smaller trees should have the roots cut shorter, and larger longer. As a rule, the radius of the circle should be about five inches for every inch of diameter of the tree. The trench should go deep enough to cut all lateral roots. Enough roots must be cut to check the tree that the annual growth shall not exceed ten inches; and whenever the tree replaces the roots cut, so as to make excessive growth, the operation must be repeated."

In case of pear blight, root-pruning must be done when the disease *first appears*. It will not do to delay, and, if well performed, seldom fails to effect a cure. A good sharp spade should be used.

A correspondent of the *American Agriculturist* says: "To obtain fruit from barren trees, take coarse, strong twine, and wind it several times about the lower limbs of a tree and tie it as tight as possible. The next spring all the top above the cord will be as white as a sheet, and there will not be one blossom below. A neighbor seeing his trees loaded with pears, used the same method with the same success."

This is not a new discovery; but, how it would effect the subsequent growth and health of a young tree we are not prepared to say. We prefer to do nothing in the way of severe remedies but in exceptional cases. We are inclined to the opinion, that, in the case of excessive growth, if we omit culture, (we allude to the apple,) and allow grass to form a thick turf above the roots, and wait a reasonable time, we shall not be disappointed in the crops.

We think it wrong to cripple and retard the growth of a young tree if it can possibly be avoided; better to wait, as nature will generally set things right in proper time. J. FITZ.

Keswick Depot, Albermarle Co, Va.

Hints on Fruit Culture.

Mr. Meehan, ever concise and practical, has the following in his May *Gardeners' Monthly:*

Fruit culture for profit has had to contend with over-abundant crops the past year or two, and the trees in such cases are weakened. Now, this may be remedied by thinning out fruit in infancy. This prevents a glut, gives finer fruit, and saves the trees.

Besides thinning the fruit, we should thin the young branches. Handsome forms are as desirable in fruit as in ornamental trees. No winter pruning will do this exclusively. It may furnish the skeleton—but it is summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear, such as would push too strongly ahead,—and keep doing so till the new buds seem no stronger than the others. Thus the food gets equally distributed.

Fruit-growing primarily for pleasure, to follow with plenty of good fruit, has been much encouraged by the greater success of the grape of late years. There is much more interest in having collections of varieties than there used to be.

As to the best system of pruning grapes, there are several "schools," all contending that their views are "decidedly best." In such cases, we have generally found there is much to admire in them all—situations and peculiar circumstances deciding the point in each individual instance. There are a few points incontrovertible to insure success, and it matters little what system of pruning is followed, so that they are secured. First, a healthy set of roots of the previous year's growth is essential to produce vigorous start of growth the year following. Secondly, after starting, these roots can only be kept vigorous by encouraging an abundance of healthy foliage, to be retained on the vine as long as possible. Thirdly, the leaves of the first growth are at least of double the value to the plant than those from secondary or lateral shoots; they should, therefore, be carefully guarded from injury. Fourthly, checking the strong-growing shoots strengthens the weaker ones, equalizes the flow of sap to every part of the vine, and insures regular and harmonious action between all the parts. Any system that secures this does all that is necessary for the general health and vigor of the vine; and where some special objects are desirable, such as dwarfing, particularly early bearing, productiveness at the expense of longevity, special means must be employed to bring them about.

Undeveloped Fruits of America.

A few wild fruits may be mentioned which manifestly have great capabilities, that may or may not be developed in the future. The leading instances, in my mind, are the Persimmon and the Papaw; not the true Papaw, of course, which we have in Florida, but the Asia Minor or Western Papaw so called. Both Persimmons and Papaws are freely offering, from spontaneous seedlings, incipient choicer varieties to be selected from both fruits when only a few years old, thereby accelerating the fixation of selected varieties into races; and both give fruits of types wholly distinct from any others we possess of temperate climates. He that has not tasted Kaki has no conception of the capabilities of the Diospyrus genus. The Custard Apples of the West Indies give some idea of what might be made of our Papaw when ameliorated by cultivation and close selections for many generations. I have understood that one of the veteran pomologists of the country, Dr. Kirtland, of Ohio, a good while ago initiated a course of experiments upon the Papaw in this regard; it would be well to know with what success, and if the breeding and selection have been continued.

Our American Plums have for many years been in some sort of cultivation and have improved greatly upon the wild forms; but I suppose they have not been systematically attended to. Their exterior liability to black knot and other attacks renders them, for the present, unsuccessful.

Finally, if pomology includes nuts, there is a promising field uncultivated. Our wild Chestnuts are sweeter than those of the Old World; it would be well to try whether races might not be developed with the nuts as large as Marrons or Spanish Chestnuts, and without diminution of flavor. If we were not so easily satisfied with a mere choice between spontaneous Hickory nuts, we might have much better and thinner-shelled ones. Varying as they do, excessively in the thickness of the shell and the size and flavor of the kernel, they are inviting your attention, and promising to reward your care. The Pecan is waiting to have the bitter matter between the kernel bred out; the Butternuts and Black Walnuts to have their excess of oil turned into a farinaceous and sugary matter, and their shells thinned and smothered by continued good breeding, when they will much surpass the European Walnut.—*Prof. Asa Gray.*

Confusion in Peach Nomenclature.

We find in a communication of Mr. Randolph Peters to the *Gardener's Monthly* for May, the following letter from Col. Wilkins, which we copy, the peach referred to having been noticed under its improper name in our pages:

RIVERSIDE, KENT CO., MD., *Feb. 4th*, '76.

RANDOLPH PETERS, ESQ:

Dear Sir:—Yours of the 2d inst. received. Some people in Kent Co., Md., as well as the correspondent in the *Gardener's Monthly*, have got things not a little, as you say, but I think a good deal mixed up. I know but one peach called the Comet, the one sent out by Thos. Rivers, a yellow-fleshed peach, ripening with me about with Smock. The peach you allude to is known to me as Bilyeu's Late October, and was propagated by Bilyeu from what he supposed to be a natural tree, which he found in Caroline Co, Md. With the owner's permission he obtained specimens of the fruit, and secured buds to propagate from the next season, and in due time he planted them on land that he got on shares, both in Caroline and Dorchester Co., Md. I succeeded in getting quite a large lot of him. Several parties propagating peach trees in this county for sale, got buds from me of this peach, and every fellow seems to have thought he had a right to give it a new name. Some of these parties called it Comet. Sherman calls his Sherman's October. Now about the peach. It is not a shy bearer, but sometimes, when most other varieties are full, these will have none on them, but most generally when there is a crop this variety is well loaded. This is not the only peculiarity. I do not know any peach that is so much influenced by soil and situation as the Bilyeu's Late October. When grown upon high, dry, sandy soil of good quality, you obtain a valuable peach for market and for table use. They are large size, fine color and fine flavor, but when grown under other circumstances are small, and inferior in quality. There are only a few spots where I have them planted that suits them. I have sold this fruit after the 20th of October at $4 per box, when the ruling price during the season for peaches was less than $2. Respectfully yours,

EDWARD WILKINS.

The Phylloxera—A New View.

To Dr. Victor Signoret, of France, we are indebted for a copy of The Bulletin of the Session of the Entomological Society of France, held March 22d, 1876, and at which Dr. S. read a note upon a new kind of *Aspidiotus*, and upon the Phylloxera. In travelling across the country around Nice in search of the Phylloxera, which he says he did *not* find, he met with another inhabitant of the vine which has not before been noticed. He describes it and calls it *Aspidiotus vitis*. The shield or shell which covers the male is oval, very much lengthened, and grayish black in color. The female is globular, dark brown in the body, yellowish brown towards the extremity of the abdomen.

This species is met with on diseased vines where he expected to have found Phylloxera, and occupies old bark where we only see old shields or shells; it was in raising these old barks that he found them living on the *new bark* of the year, from the collar up to the first pruning points of the vine.

These vines planted on the dry hill-sides of Bulet, furnishing a vine much esteemed, were in a sad condition, presenting a growth of some inches only.

It would be proper, following the opinion of all official commissions on the diseases of the vine, to accuse this *Aspidiotus* of the bad condition of the vines, whilst if we examine the lands formed from the wash of rocks centuries old, all are led to inquire what will become of the vines when the drouths prevail from June to September.

He adds:

"I profit by this occasion to reply to an article of M. Maurice Giraud, inserted in the *Petites Nouvelles Entomologues*, of 15th October, and stated in these words:

'I hope the facts will not be slow to do justice to the sad theories already so wide-spread which attribute the evil to exhausted soils, to degeneration of the vine, etc.; with these preconceived systems and refusing the pure and simple observation of facts, we arrest every reasonable effort and throw discouragement everywhere.'

As this is a stone in my garden I will send it back to him saying, that it is the Phylloxerists which do the most evil; for where it is the Phylloxera that does the injury, then there is nothing to do. On the contrary I say, poor lands, exhausted vines, bad culture, waste of manure, dryness in June, July and August, frosts of March and April, and then on the contrary all is done which we can do for a remedy; while with the idea of the *Phylloxera cause* prevalent, the vine-grower has only to fold his arms in sleep and let the commission act.

Besides I will add that since the history of the Phylloxera is known entirely, thanks to M. Balbiana, we can very easily destroy it by removing the bark from old vines, burning the whole and washing the vines in petroleum when the eggs are laid. Every egg will be destroyed and adieu to the future generation. Then we shall see if it is the Phylloxera, or the want of water, of manure, &c., and in any case no one is injured. I encourage, on the contrary, all the people of the South during the terrorism of this terrible Phylloxera. In fine I will close this note as I've always done, in asking water and care in place of sulpho-carbonate, the employment of which is not practicable."

American Grapes and Wines.

Messrs Editors American Farmer:

Looking over a bundle of old letters to day, my attention was attracted to one from you dated Sept., 1873; and containing an article on wine-growing, at Ridgeway, North Carolina; written by Mr. Labiaux, of the firm of Labiaux & Clerc.

These gentlemen, it appears, had just imported and planted on their grounds near Ridgeway, one hundred thousand cuttings of grape vines from the south of France; and proposed to extend their vineyards until every acre of their tillable land had been planted. They seemed sanguine of success, as will be seen by the following extract from Mr. L.'s communication:

"In April and the first days of May, we planted seventy thousand. From our nurseries we intend to set out, the coming winter and spring,

from one hundred to one hundred and twenty-five thousand more (and in time, every acre of our tillable land will be planted with vines.) We plant five feet apart each way. We do *not* manure. We use no supports of any kind. It is remarkable that a few of our vines, only planted three months ago, from cuttings, do already bear fruit—perfect bunches, which, however, we do not expect to mature well. We reckon that in two years we will make wine for the *Centennial Exhibition* and "*other purposes*," and that, if the year after we had to sell, our *vin ordinaire* (pure, of course,) at only *thirty* cents per gallon, we will yet make a very large profit. We desire to popularize wine-growing; we want good wine on the every-day table of the mechanic and the laborer, instead of the extremes—water, tea and whisky. We solicit competition, and hope for an early market quotation for *home*-produced grape wine, and we offer to all persons calling properly on us, at our farm, free and full instruction of the simple way of raising grapes, as they ought to be raised.

"All that has been said to the contrary, notwithstanding the 'foreign' grape, *i. e.* at least five kinds of those we have planted (the five other, we affirm not yet their complete success) *will* grow here, and give us more and better fruit and wine at less cost of money and labor, that any of those cultivated so far in any of the States of the Union. The reason that some viticulturists may have failed in planting foreign varieties of grapes, is, that either they had not the right kinds of plants, did not plant them in suitable soil, killed them by manuring, or, in short, did not understand *the thing!*"

Now that the centennial is upon us I should be pleased to learn from you whether success has crowned their praiseworthy effort; or whether, as in all former attempts to grow the European vines in this country, the pestiferous Phylloxera has blasted their bright prospects.

American wine-growers want now a good native grape that (like the French varieties, of which Mr. Labiaux writes) can be grown *without supports of any kind.* Were it not for the labor and expense of preparing so many perishable stakes or of building so much costly trellis, good wine would soon become more plentiful than cider in the United States. In my own practice I still adhere to the mode of training to stakes. With three stakes to each vine, (one for the young wood, and two for the fruit-bearing canes,) I can raise as many and as good bunches as a vine ought to bear. I cultivate my vineyard rows with horses both ways, thus keeping the surface level. The great saving over the trellis system is in hand labor. My bearing vineyard now comprises seven acres. A man and woman perform all the labor, including hoeing, and it would be difficult to find a weed or blade of grass in it during the growing season.

My wine crop last autumn was very satisfactory, both in quality and quantity. It is just now passing through the second fermentation, and will soon be ready for market. The Concord wine (which I have made for the first time) develops more body than I expected from that grape. The *Ives* I think you would esteem quite equal to the best Claret; and the little Clinton has made so good a wine, that I shall plant many acres of it next fall. All of these wines are remarkably *fruity;* and even in the jellies made from them, the flavor of each variety of grape may be readily recognized.

The spring has been very dry, and we now want frequent showers to bring forward our gardens and grass. I have about six acres of orchard grass from which I wish to save the seed. Can you tell me how best to do it?

Our peach crop is uninjured as yet, though the old orchards show but little fruit; the result, I suppose, of over-production last year. The young trees are full enough. You will soon have the first fruit of Anne Arundel—early strawberries—in your markets.

Yours truly, L. G.

Anne Arundel Co., May 8th, 1876.

Bearing on the Above.

Messrs. Editors American Farmer:

Dear Sirs:—In reply to your favor of the 13th inst. (addressed to Labiaux & Clerc, Ridgeway, N. C.,) I must say, with the greatest regret, that my *experiment*, in raising the foreign varieties of grapes in N. C., has proved a total failure.

I feel confident, *now*, that the *Vitis vinifera*, cannot be grown east of the Rocky Mountains.

My loss, in trying to grow the French grape, in this country, has been a very heavy one, and should be a warning to all.

Yours truly, J. L. LABIAUX.

Newark, N. J., May 17th, 1876.

The Potato Bug.

These pestiferous insects have begun their work of destruction in various quarters this spring. The only sure remedies against their ravages are to set all the boys to hunt them up every morning, and destroy them as fast as they make their appearance; or, to use the Paris Green, if they should get ahead. Messrs. Wm. Davison & Co. are advertising the antidote, and, as will be seen in the advertisement on another page, gives a drawing of the bug, which will enable those who may not heretofore have been favored with its presence to become acquainted with his bugship. There is no danger from the poison if care is taken that the dust is not inhaled and that the powder does not come in contact with the broken skin. It should not however be put on with the hands, but by the use of a perforated tin box; and if this has a handle to it two or three feet long it will be better. Apply the poison once or twice a week.

This pest threatens to be very troublesome in this vicinity the present season, and is not confining itself to the potato-vines. Of the Egg-plant it is specially greedy, and the market gardeners around Baltimore have lost thousands of tomatoes, and we hear of it on the grape. The truckers seem to object to the use of Paris Green on the Tomato and Egg-plant, and many adhere to hand-picking. Some think air-slacked oyster-shell lime a remedy; with others it is ineffective.

Two methods have been tried with the best success as to economy: they are either to mix the green with water,—a heaping tablespoonful to ten quarts of the fluid,—and sprinkle on with

a common sprinkler or an old broom, or to mix the green with flour, in proportion to one part green to six of flour, sifted on when there is no dew on the vines, either through a muslin bag suspended to a convenient handle, that it may be carried and shaken over the vines, the person making the application walking upright; or with a pail, the bottom being of fine wire gauze or finely-perforated tin. Where these methods are used, the whole expense per acre, for both material and cost of application, will not exceed $5 for the season. The flour mixture is believed to be the best, as it makes the green adhere to the vines, so that the hardest rain will not remove it.

An implement very convenient and expeditious in applying this material is highly recommended to us by those experienced it its use. It is known as "Peck's Liquid Atomizer," and is claimed to clear an acre of bugs in two hours, at a cost of 25 cents for material. It is manufactured at West Grove, Pa., and should be kept for sale here by our implement houses.

Lawn, Flower Garden and Greenhouse.

Hardy flowering shrubs—like Spiræas, Deutzias, Weigelas—which have done blooming should be well cut back to secure plenty of new wood for next year's bloom. Evergreens may still be moved with safety if care is taken to put the ground in good condition. Mulch Dahlias and give frequent applications of liquor manure. Keep the grass on the lawn mowed short. Trim hedges this month, remembering to maintain a conical shape.

In the greenhouse Caladiums and Calocasias will need abundant heat and moisture. Begonias of the Rex section should be repotted and kept in a warm shady situation. Choice specimens of Cinerarias, Calceolarias and Pansies should be reserved for seed. Fuchsias need special care to be protected against the red spider, which is kept down only by constant syringing.

The Vegetable Garden.

June.—Do not cut Asparagus too late or too close, as this weakens the roots for next year. Cabbages for fall, may be set out and seed sown for late crops. Every ten days a succession of Corn should be planted. Canteloupes, Melons and Squash should be kept clean, and care taken against the bugs. Towards the end of the month sow Cucumbers for pickles. Egg plants need abundant manure, best applied in liquid form. Lettuce should be sown, if at all, in a moist place. Keep Onions well worked. Break off the flower stalks of Rhubarb. Sow Ruta-Bagas towards the close of the month. Sweet Potato vines should not be allowed to root, as this diminishes the size of the roots. Tomatoes should have some kind of a support.

Keep a keen eye for insects. Let the weeds have no chance at all; if you do they will get ahead of you, but encountered just as they peep above the surface they are easily vanquished.

Bean Culture.

Farmers who have the right kind of soil will find that the medium-sized white field bean is one of the most profitable crops they can grow. If sent to market in prime order, they are always ready sale, and commmand good prices. They require high, dry, moderately rich land. A rather hard clay or gravelly loam is best, but sandy soil will answer. They will not succeed well on low, black, mucky land, as they grow continually and never ripen. I plant two feet apart each way, in hills. Use plenty of seed, as they are liable to be eaten off by the cut-worm. After the trouble from worms is over, thin out to four plants in the hill. Plant about the middle of May. Cultivate thoroughly, with horse and hoe, during the summer. Pull them in September, as soon as ripe; stack around a stake well set in the ground, with the roots outside, and put a little straw or hay on top to protect them from rain. As soon as dry, haul to the barn and thresh immediately. Good beans, when threshed, look white, clean and dry.

There is a variety of bush beans, some of which we should plant to supply the family with string beans. They will grow for this purpose, in any soil. Plant in drills about two feet apart; they need but little care.

The varieties of pole beans are too numerous to mention; decidedly the best is the Lima. It is a delicious vegetable, green or dry, during the whole year. A warm, rich, sandy loam suits it best. It is a rank grower. Plant in hills about four feet apart each way, and plant firmly in each hill a good stake ten or twelve feet long.—Put into each hill, also, a shovel full of old rotten manure, and mix well with the soil before planting. Plant about the 20th of May. Put in plenty of seed. Leave hills a little higher than the ground.

The Centennial Exhibition.

This is a great success, unequalled by any similar undertaking the world has yet seen. Some portions are not yet in perfect order; and the Agricultural Department is said to be rather more backward than any other. This will of course soon be remedied.

The readers of the *Farmer* will be kept advised in future numbers, of whatever is most attractive, useful and interesting in the Agricultural and Horticultural divisions.

At the May Exhibition of the Horticultural Society, Mr. W. W. Spence exhibited a very large specimen of the *Anthurium Scherzerianum*, or Flamingo plant, in full bloom. The flowers are brilliant scarlet, giving the plant its popular name, and remain long in perfection. Specimens of this plant have sold lately in England for $225.

Agricultural Calendar.

Work for the Month—June.

No crop now but needs the farmer's watchful eye upon it; and the crop of weeds and grass more perhaps than all others. Constant warfare upon these in growing crops is never more necessary than now; and especial care should be taken to keep up to and ahead of your work. Doubly necessary is this with the

Corn Crop, which should be well worked and cared for from the very start. Replanting, when necessary, ought to be done at the earliest moment, and the cultivation carried steadily, regularly and quickly on till completed. If the preparation of the ground has been thorough, all now that will be needed will be shallow stirring, to keep down the grass and open the soil to the air, the rain and dew.

Potatoes.—Towards the middle of the month, in this latitude, in most cases, is the best time to plant the main crop. Good soil and clean cultivation are essential to success. Suitable fertilizers are found in all the inorganic manures; but a soil well supplied with well-decomposed organic remains is favorable to their development. Seed planted when the furrows are freshly opened are not so liable to become dried up as when they are put in the hot, dry soil. Begin to cultivate as early as practicable.

Tobacco.—The earlier the plants are set out, the better on the average will the crop be. Every pains therefore should be taken to have the ground made ready for the earliest season offering. It should of course be in the finest possible condition, and the first hoeing should be given as soon as possible. Upon good cultivation,—constant mellowing and æration of the soil,—the early and constant destruction of grass and weeds, will the result of the crop depend.

Ruta-Bagas.—These roots are easily raised and kept. They are nutritious and productive, relished by stock, and healthful. The crop is sown here from the middle of this to the middle of next month; and there is an advantage in early sowing, as there is then an opportunity of re-sowing if the first crop is attacked by the fly, which is sometimes very destructive.

The crop is rather indifferent as to soils, preferring a sandy loam, naturally good or artificially enriched. Fine ground bones, plaster and ashes mixed, super phosphates, are all favorite applications. The ground ought to be reduced to the finest tilth, after deep plowing. The seed is best sown in drills, which should be about 30 inches wide, and the plants thinned out to stand 10 or 12 inches apart. The operation of sowing is most regularly and easily performed by the means of a hand-drill, which sows and covers the seed and makes the nearest row at the same time. The sowing should be done as soon after the ground is prepared as possible, as the germination of the seed is quicker and more certain when brought in contact with the moist earth. If sown just before a shower of rain, so much the better,—the plants then quickly reaching the stage of the rough leaf, when they are safe from the fly. When attacked by that pest, the plants, when the dew is on them, are dusted with plaster, air-slacked lime, sifted ashes, &c.

Run the cultivator through the rows as soon as the plants appear. Repeat this as often as practicable, giving as deep working as possible, and use the hoe between the plants until the leaves meet and prevent it. Any vacancies in the rows may be filled by transplanting.

Sowed Corn.—Whenever and wherever you have ground to spare, put in a succession crop of this up to the 1st of August. It will come into play, cured, in winter, if not wanted for summer use. Sow as heretofore advised, in drills, and run the cultivator two or three times through the rows during its growth.

Millet and Hungarian Grass.—Crops of these may be sown now, or at any time on, and will be found convenient either for curing or for green forage. Don't let them mature their seed before cutting. See elsewhere a report on the now famous German Millet.

Buckwheat, as a crop for the grain, or to turn under as a green manure, may be sown towards the end of the month or in the next. To produce a crop of grain, it ought to have a good soil, preferring a sandy rich loam, but also succeeding on stiffer lands if in good heart. Land not actually good ought to be treated with some manure, the best perhaps being well-rotted barn-yard. Super-phosphates and bone-dust are, however, excellent for this crop. From two to three pecks of seed to the acre are enough.

Cutting Clover and Orchard Grass.—Both should be cut for hay as soon as possible after they are fairly in bloom. Clover should not lie too long in the swath exposed to the hot air and sun, but put up into little cocks, which, when the dew is off next morning, are turned over, lightly spread out, made up again into larger cocks and secured the next day, no rain having fallen on it. Cured thus, it is not black and woody, but green, fragrant and nutritious. Orchard grass makes very poor hay if the stems ripen and get woody; and clover gets black, bitter and chaffy.

Meadows.—As soon as the crop is cut, if a dressing of compost well-rotted and evenly spread, or a mixture of bone-dust, ashes and plaster, or a couple of hundred pounds of superphosphate is put on the grass land, the application will be found a profitable one.

Harvest.—Make everything ready in time, including implements, hands, stock and provisions. Have too much force rather than the chance of too little. Begin cutting at the earliest hour practicable. Delay after this will bring greater losses than to hurry on.

Fish Guano.

One of the best substitutes for Peruvian guano, is that made from the refuse of the Fish Oil manufactories, in which the Menhaden fish is principally employed in the Eastern States. Prof. Goessman's report of his last year's work as State Inspector of Fertilizers, in Massachusetts, gives the quantity of fish guano from this source, as 53,625 tons, for the year 1875; to which may be added a large amount of fresh

fish refuse used by farmers along the sea-coast. *The Scientific Farmer*, in alluding to the production of this fertilizer as shown by Prof. G, says that the comparative low price of this refuse, in its crude state, has caused its extensive use as a fertilizer, for which its composition entitles it to stand among the best sources of raw material. On this account it has been prominent as a component of ammoniated super-phosphates.

The fact is, as stated by Prof. Goessman, that all true guanos, the Peruvian not excepted, owe their most valuable constituents, in a controlling degree, directly or indirectly to the fish.

The Scientific Farmer gives the following as the process as to the manufacture, valuc and sale of this Fish guano:

Fish refuse enters the market in three conditions, viz: as *crude stock*, with 50 to 55 per cent. of moisture, selling at the works at from $9 to $12 per ton; as *fish scraps*, with 20 to 40 per cent. of moisture, and selling from $15 to $18 per ton; and as *fish guano*, containing 8 to 20 per cent. moisture, selling at from $35 to $40 per ton. But the line between the different grades is very loosely drawn.

The variations in moisture, and the inferior mechanical condition, are serious objections to the general efficiency of fish fertilizers.

The composition ranges, in the case of nitrogen, in fish guano or dried scraps containing 10 to 17.50 per cent. of moisture in the samples examined, from 6.46 to 8.35 per cent.; of phosphoric acid, from 7.72 to 8.46 per cent. Samples containing a larger amount of water probably have a corresponding proportion of phosphoric acid and nitrogen.

This fish refuse is the pomace produced in the manufacture of oil from Menhaden fish, which are caught in large quantities along the Atlantic coast, from New Jersey to the Provinces. The fish are boiled by steam under 70 to 80 pounds pressure, in large wooden tanks, and afterwards subjected to a pressure of 115 to 120 pounds to the square inch, sometimes 160 pounds. This practice leaves from 50 to 55 per cent. of moisture. The higher grades are obtained by a drying and grinding process, and further pressure In the course of the manufacture, due chiefly to misapplication of heat, a considerable amount of the soluble nitrogenous matter is lost, there being nearly 15 per cent. of nitrogen on the average in the flesh of fish. This waste will doubtless be remedied when it is realized that nearly $30 worth is thus thrown away for each ton of pomace run through the press. The bones and scales consist of varying proportions of cartilaginous matter and bone phosphate.

A well dried and ground fish guano is one of the best substitutes for Peruvian guano, and ranks equal to the best quality of animal dust fertilizers. "In fact, all true guanos, the Peruvian not excepted, owe their most valuable constituents, in a controlling degree, directly or indirectly to the fish."

About 4,000 tons of fish guano were shipped to England in one month of 1875, where a large demand is springing up as a result of experimental shipments the year before. In view of this fact it behooves manufacturers to adopt the best methods of treatment, and farmers to avail themselves of this cheap manurial substance.

It is recommended to first cut or grind the fish refuse in suitable machines to a fine condition, then treat it with sulphuric acid. This method would reduce the usually coarse material to a pulverulent condition, render a considerable portion of the phosphoric acid soluble, and combine the nitrogen into a form (sulphate of ammonia) at once stable and quickly available as plant-food. Then by thorough mixing a product would result of uniform composition and high value. Even the ordinary farmer would doubtless find it to his advantage to treat the fish pomace he may use with from 5 to 10 per cent. of sulphuric acid, and thoroughly mix. A few English manufacturers have already adopted this practice, to their evident advantage.

Composting Manures.

This work is always in order, and its importance cannot be too often dwelt upon. We have frequently given advice upon the subject, but will now add the following suggestions found in the transactions of the Essex Co. (Mass.) Society, from the pen of J. J. H. Gregory, the well-known seedsman of Marblehead. He says:

For more than twenty years the farmers of this town have been market-gardeners, and while the average quantity of manure used by them in their gardening operations is from eight to ten cords per acre, the average quantity of barn-yard manure is not above two cords per acre; the great dependence is upon composts—on which they have kept up the fertility of their land, and in fact increased their crops. In the course of his report Mr. Gregory tells how he made a compost for a three-acre field, consisting of twenty-five barrels of hen manure, twelve barrels of crushed bone, and three barrels of Kayni (potash salts.) These three articles make up about all that vegetation needs, viz: nitrogen, phosphate of lime, and potash—and the cost was $71.30, including $5 for expense of composting, and $5 for carting the materials. Manured with stable manure in sufficient quantity, the cost of manuring the three acres would have been $180. In making the compost, the materials were laid up in a square heap, in alternate layers, to the height of three feet. It remained three days until well heated by fermentation, when it was forked over, again left for one day, and then forked over, when it was very thoroughly mixed and ready for use. A similar compost may be made by any of our farmers, and if the chemical formulas aid them in making such composts, or by being used give greater value to the same, their promulgation will be a matter of public good.

VALUE OF POULTRY.—A curious statement has been made and published in a French paper in regard to hens. It reckons the number of hens in France at 40,000,000, valued at $20,000,000. Of these, about one-fifth are killed annually for the market. There is an annual net production of 80,000,000 chickens, which in market yield $24,000,000. The extra value to be added for capons, fattened hens, and the like, is put at $2,000,000. The production of eggs amount to $48 000,000. In all, it is reckoned that the value of hens, chickens and eggs sold in the markets of France is $80,000,000.

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JUNE 1, 1876.

Capt. McGinnis on the Use of Lime.

We take it for granted none of our readers will overlook or forego reading this communication. The Captain, from his investigations on this subject, has come to be considered an authority, and is so continually applied to for his views, that he finds the burden grows too heavy for private correspondence, and in this, as in other letters, and in his Harrow Circular, lately issued, and to which we shall refer again, he gives notice to his correspondents that he will reply to queries, &c., through the pages of the *American Farmer;* mainly in his resumption of the "True Theory of Farming," the authorship of which he now avows.

Handsome Virginia Farm for Sale.

The land advertised in this issue by Dr. James Smith, offers a good opportunity for an investment, or a chance for several parties to buy and divide a parcel of fine farming land, likely to be profitable at once and increase in value prospectively. It is situated immediately opposite Point Lookout, on the Maryland side, which has lately been sold at a handsome figure, and promises to become in time a very popular resort. The property includes valuable oyster beds, and is admirably situated for fruit and truck growing.

American Pomological Society's Proceedings.

We have received from the Secretary, Hon. W. C. Flagg, the proceedings of the session of the Society held last year in Chicago. The volume contains many papers of interest, as well as the debates at the meeting, and is edited with care and fidelity. Elsewhere will be found the report of the Maryland representative on the general Fruit Committee, which we have taken from it.

The Champion.

Messrs. L. H. Lee & Bro. could hardly have devised a more striking and emphatic plan of showing the popularity of the Champion than the exhibit they make of the long list of farmers in Chester Co., Penna., who are using their machines. That section is noted for its intelligent, successful farmers, and their extensive use of the "Champion" speaks loudly in its favor.

Adorning Railroad Stations.

We do not know of anything better calculated to stimulate a taste for gardening than nicely-planted gardens at all our country railroad stations. Persons who have travelled abroad will remember the train gardens on many of the English roads, and in France some of the stations are perfect little earthly paradises. The taste for this decoration is extending here, and it deserves commendation, since the effect is not only contagious in the locality of every such pretty example, but the passengers on passing trains are likewise impressed by evidences of culture and of love for the beautiful.

Some of our railroad lines are adopting such plans. Many of the stations on the Pennsylvania road are handsome buildings, surrounded by well-arranged and neatly-kept bits of gardening. So, too, its feeder, the Northern Central, is vastly improved above what existed a dozen years ago, and well-arranged buildings of attractive designs replace the cabins formerly the only refuge from the weather.

At Green Spring Junction, on the margin of Lake Roland, the waste ground has been beautifully turfed, ornamental trees planted, and a number of flower-beds laid out. These are now being effectively planted by Mr. Andrew L. Black, one of our Baltimore florists; and as this is the *Farmer's* station, we hope he will make them good specimens of his taste in that line. All this speaks well for the railroad company, which is not slow to keep up with the demands of the public comfort and taste.

HANDSOME CHROMO.—Messrs. Strobridge & Co., Cincinnati, send us one of their publications, the reproduction on stone of an oil painting of three well-bred dogs,—a setter, Don, and two pointers, George and Peg. This picture is of a much better grade of execution than many of this class, and deserves a place on the walls of any country house where field sports are indulged in.

A Text to Preach From.

A Maryland farmer writes us: "I send you a text from which you may preach a good wholesome sermon, and do good in bringing deluded farmers to see the error of their present ways. Let farmers and property-holders do their own work, and commit to no other profession the duties they should perform themselves. The great curse of the country is the entire delegation of public duties to lawyers. There are 40,000 lawyers in the country, 198 of whom are in Congress; 2,500,000 farmers, and 18 of them members of Congress. The profession of the law is a noble one, and as necessary as any; but without sympathy or interest with any other, its disciples are led into heartless egotism. Let them confine themselves, as formerly, to their own sphere; let them administer and expound law, but not have so much to do in making the laws. Had our farmers, merchants and mechanics attended to our public concerns, the country would not now be suffering from the vultures who prey upon its industrial interests."

This is sound doctrine, but the delegation of the administration of public affairs to the legal class rather comes from the presumed better adaptation of its members, from education, to perform them.

As intelligence and education spread among the masses of our farmers, this state of things will improve. It is in this direction that we look for some of the greatest benefits of the Grange, which, as an *educator*, will do and has already done a great work.

The American Farmer.

It is very gratifying to us, but we are not sure that it is interesting to our readers, to know what is thought of our efforts to make the *Farmer* perform its due share of the work in the agricultural field; yet the testimony is so abundantly and so handsomely given, that we may at least be excused for quoting from many similar expressions, the following words of appreciation and encouragement from gentlemen whose good opinion and judgment we value as of real weight.

One distinguished as a statesman, a soldier and a scholar, writes as follows:

CAMDEN, S. C., *April 15th*, 1876.

Messrs. Samuel Sands & Son:

I am just in receipt of the April number of the *American Farmer*. This number, for variety of timely subjects, as well as for the fullness and ability of the treatment of them, is replete with excellence; and is in itself worth the whole year's subscription.

Health, happiness, long life and prosperity to you is the sincere wish of Your friend, &c.,

JAMES CHESNUT.

Another, not less distinguished, in an adjoining State writes:

WASHINGTON, GEO.

Messrs. Samuel Sands & Son:

DEAR SIRS:—I enclose P. O. O. for one dollar and fifty cents, subscription to your *American Farmer* for 1876. You are doing a great work; my best wishes for your success.

Very respectfully, R. TOOMBS.

Geo. E. Ritchie, Cabarrus Co., N. C., writes, sending seven subscriptions: "When times get better, I can get up a large list of names for you, as your journal has made a good impression in this county wherever read."

Charles Mason, King George Co., Va., writes: "Allow me to thank you and congratulate your numerous patrons upon the improved tone of the *Farmer*. Mr. Holman's articles are, alone, worth five times the subscription price, and take it all in all, it is unquestionably the cheapest and best agricultural paper published in America."

Thos. Watts, Esq., Elizabeth City County, Va., writes: "Enclosed you will find subscription for the dear old *Farmer* for 1876. I can't do without it, and I expect to take it as long as I can raise the money to pay for it."

E. Falkenstein, Preston Co., W. Va., says: "I have economized in several things since times became so hard; but I would not consider it economy to stop my *Farmer* while I am a farmer myself."

Michael C. Scott, Woodville, Va., writes: "The *American Farmer* is the best agricultural paper I ever read."

C. C. Wilson, Queen Anne's Co., Md., says: "Your last number is replete with good reading, and I have enjoyed it to my heart's content."

James M. Rudasill, Shenandoah Co., Va., writes: "I consider the *Farmer* one of the best of its class. Its instructions are always practical, while it numbers some of our best farmers among its contributors."

W. P. Andrews, Abbeville Co., S. C., says: "It is impossible to do without it, if I take any paper, for next to my denominational paper it comes, and none before it."

Dr. James Smith, Northumberland Co., Va., says: "It holds a conspicuous place in my library, and I peruse its pages with great delight."

Andrew Sydenstricker, Greenbrier Co., W. Va., writes: "You may count me a subscriber as long as I live."

We might add many more, but we close the selection with what we consider

A MODEL LETTER.

NORFOLK COUNTY, VA., *May* 11, 1876.

Messrs. Sam'l Sands & Sons:

Gentlemen—Your circular of May 1st, calling my attention to a previous bill in the *American Farmer* of my arrearages, came no doubt duly to hand; but forgetfulness is my only plea. Please accept my best regards and apology for *this* omission, with a promise of more promptness next time, and also a more substantial peace-offering in the shape of a greenback V for the *American Farmer*, which I consider one of the very best, if not *the* best, agricultural paper published in this country. I take the leading ones. I like your paper for its practical, plain, common-sense teaching. — —

The Law of Fences.

Here is a decision which sheds a gleam of hope on this subject. It is in accordance with some other Maryland decisions, and we trust will soon be recognized everywhere through the State as right and justice as well as law. We quote from the *Port Tobacco* (*Md.*) *Times:*

"The cases of George Simms and ——Nally *vs.* J. S. Richmond—two cases—appeals from Dutton. These were actions to recover from Richmond damages done by his cattle trespassing on the corn fields of plaintiffs. The Court after hearing the evidence affirmed the judgments in both cases, thus putting Mr. Richmond in for the whole damages and costs. The Court announced in these cases, most emphatically, *that the law required every man to keep his cattle at home, and unless he did so he was responsible for all damages done by their trespasses.* We hope people will take notice of the law as thus laid down, and save themselves and their neighbors trouble, annoyance and expense. In the above cases, the failure of Mr. Richmond to regard this mandate of the law will cost him probably over $100.

Raw vs. Cooked Corn.

The superintendent of the Iowa Agricultural College Farm has been making some experiments in feeding hogs with the following, which he publishes through the college paper. He selected 15 hogs of the same age and breed, nearly the same weight and condition, prepared for the experiment by the same feeding and treatment from pigs. He divided these hogs into pens of three each; for the past two months fed equal dry weights of dry corn, soaked corn, boiled corn, dry meal and cooked meal. Then for nearly two months he continued to each pen the same form of corn, giving, however, as much as the hogs would eat. The result of four months of feeding showed that the different forms of corn had made the following live weights of pork:

1 bushel of dry corn	13	lbs. pork.
1 bushel of soaked corn	10½	" "
1 bushel of boiled corn	10	" "
1 bushel of dry meal	13 2-5	" "
1 bushel of cooked meal	5 9-15	" "

The International Trial of Reapers and Mowers

Will be held in Bucks County, Penna., near Schenck and Eddington stations, Phila. & Trenton R. R., during this and next month. The points are arranged under five heads, grouped into three divisions, those under each division to be first determined by a separate sub-committee of experts, then submitted to the full committee, and finally reported to the International Jury—total value of points is 1,000, of which 275 are given to construction and 175 to durability; 225 to work and 175 to safety and ease of management, and 225 to draft.

A Remedy for the Scarcity of Tobacco-Plants.

Major R. L. Ragland, of Halifax Co., Va, sends the following timely and suggestive communication to the *Richmond Whig:*

Planters of Virginia and North Carolina have never heretofore witnessed such a season for tobacco-plants. The earlier sowings were almost entirely killed by frosts, and the small plants of latter sowings have been mostly devoured as fast as they come up by that irrepressible pest, the flea-bug. To nurse and manure well what the bugs have left, and to manure highly and cultivate thoroughly the few hills we can plant, seems the only remedy for the situation. No species of vegetable growth responds more readily to manure than the tobacco-plant; and although the smallest of all our farm plants at germination, none grows faster under proper care and management. As the plant requires about four months from the time of replanting until it is ready to be cut, to mature and thoroughly ripen, it is important, particularly this season, to hurry along the plants that they may be transplanted in time to make good ripe tobacco. A good commercial fertilizer, readily soluble, is better than any farm manure, because it is more concentrated and acts quicker. But it is best to use it in connection with stable manure. The Anchor brand tobacco fertilizer, Pacific and Guanape, are well suited for this purpose, as the writer knows from experience, and will greatly hasten the growth of the plants, both in the plant-bed and in the hills. Care should be taken to apply these or any other concentrated fertilizer to the plants when dry, for if they are wet with rain or dew they will be scorched or killed. Apply in small quantity and often is best. Horse manure, dried and rubbed fine, acts as a manure and mulch, keeps the ground moist, and facilitates drawing. Two or three applications of this is enough for the season.

As soon as we can estimate what amount of the crop we can plant by the 10th or 15th of June, let us set to work to prepare the land thoroughly, selecting of course, the best, and upon this making liberal applications of both domestic and commercial manures. We can thus make one plant weigh as much as two average plants of our usual crops, and improve the quality as much as we increase the weight. It will *pay* to manure highly with reliable, tried standard fertilizers the remnant of the crop that *can* be planted in time this year in Virginia and

North Carolina. We make a tobacco that can be grown nowhere else, and what we can raise will be wanted at remunerating rates.

The above suggestions are given for what they are worth, and if they possess no other merit they have at least sincerity and the example of one whose practice conforms to his recommendations.

We must plant less and improve both the quality and weight of our staple if we expect better returns; and as the frost and bug leave us no alternative but to circumscribe and greatly to lessen the average usually assigned to this crop, we may, by pursuing a proper course, learn, when we come to sell the crop of 1876, to view as a blessing what many now regard as a misfortune. R. L. RAGLAND.

Halifax, Va., May 10th, 1876.

The National Agricultural Congress

Will hold its 5th annual meeting at Philadelphia, the 12th, 13th and 14th of September next—the week of the closing of the exhibition of horses—and the week in which the main exhibition of the fruits of the northern States will be held.

Farmers intending to visit the Centennial exhibition should make a note of this, and make arrangements to kill as many birds as possible with one stone.

The officers this year are: W. C. Flagg, Moro, Ill., president; Prof. Geo. E. Morrow, Ames, Iowa, secretary; and Col. J. O. Griffith, Nashville, Tenn., treasurer. They will soon issue a programme, with names of subjects and of persons who will address the congress. We hope to see a good turnout from the south, west and northwest, and a fraternal union of agriculturists on the old "stamping ground" of American independence.

This is an association of Southern origin, having organized at Augusta, Ga., and Nashville, Tenn., as two Societies, in 1870 and 1871; combined at St. Louis, 1872, meeting in 1873 at Indianapolis, in 1874 at Atlanta, and in 1875 at Cincinnati, notices of the proceedings of the several meetings having been given in our pages.

It is intended to include in its membership all persons interested in promoting Agricultural Education, Agricultural Science, Practical Agriculture and Rural Economy, and the representatives of all organizations intended to promote the intelligence and welfare of the Agricultural classes.

There is a Vice-President for each State in the Congress. Saml. Sands, senior editor of the *American Farmer*, represents Maryland; Edwd. Tatnal, Delaware; W. P. Burwell, Virginia; Kemp P. Battle, North Carolina; B. M. Kitchen, West Virginia.

The Silk Association of America.

The annual meeting of the Silk Association of America was held on the 26th of April, at the office of the Association, No. 93 Duane st., N. Y., and the following officers elected for the ensuing year: President—Frank W. Cheney, Hartford, Conn. Vice-Presidents—Thomas N. Dale, Paterson, N. J.; A. B. Strange, New York; Wm. Ryle, New York. Treasurer—Jno. N. Stearns; Secretary—Franklin Allen, 93 Duane street, N. Y.

Baltimore County (Md.) Grange.

A sufficient number of subordinate granges being in existence in Baltimore Co., a county grange was organized on the 19th ult. at Pikesville, and the following officers elected were installed by State Master Jos. T. Moore: Colonel B. F. Taylor, Master; C. Lyon Rogers, Overseer; Ira Freeman, Lecturer; Adolphus Cooke, Steward; Geo. H. Merryman, Assistant Steward; Thos. B. Todd, Treasurer; Col. Dan'l Jenifer, Chaplain; Wm. B. Sands, Secretary; Chas. K. Harrison, Gatekeeper; Mrs. D. Jenifer, Ceres; Miss Mary D Scott, Flora; Miss Ella R. Jones, Pomona; Mrs. C. L. Rogers, Lady Assistant Steward.

Stock Sales.

The number of sales of live stock, mainly of Short-horn cattle, at the West, advertised for this season, is most wonderful, and goes to prove that the immense sums paid for animals, especially of the breed named, is not without sufficient cause. It is evident that breeders have full confidence in the continued demand for their products; and this we think is fully borne out by the prospective demand for our meats in the markets of Europe.

In each of the Western States there are ably-conducted stock journals, and they all give evidence of the great work that is now going on in the breeding of fine stock, in every department. Although the principal and most valuable business is that of Short-horn breeding, yet the extension of hog, sheep and poultry raising is also shown to be looming up to immense proportions.

In Iowa, the sale of S. W. Jacob's herd of Short-horns realized $87,000; the average of 160 head was $330; and the highest price was for a cow,—Peri the Second, of Lindate,—which brought $7,050. Hundreds of sales are yet to take place; many have already been held; and in almost every case the average has been about $325 per animal.

Sale of Short-horns.

Mr. L. R. Schnebly, Fairview, Md., writes us: "The little advertisement I put once in your journal brought me many inquiries in regard to my short-horn calves. To one of the gentlemen inquiring, Mr. E. B. Emory, Queen Anne's Co., Md., I sold a pair, the b. c. Lady's Monarch, by Duke of Bloomfield 16030; dam Lady Sherbrook 2d, by Star of the Realm 11021; and the c. c. Lady Fern, got by same bull, dam Lady Fayancy, by Sultan 9173.

Hungarian Grass.

It is an annual, and hence must be cut the same season. If for hay, sow two bushels of seed per acre; for seed, half that much is plenty. We think the young orchard would not injure the Hungarian grass as much as the grass would the orchard. If you can get the peas off in time to sow the grass by the last of June, it will do, if the season is favorable. We would prefer sowing the grass earlier, however, and follow with wheat, if the soil is suitable. When sown thickly Hungarian grass makes good hay, but it must be cut before the seeds mature. Barn-yard manure is as good as any for this grass.—*Ex.*

Fertilizer Manufacturers' National Association.

A largely-attended meeting of fertilizer manufacturers and wholesale dealers was held in this city on the 18th ultimo, and a "National Association of Chemical Fertilizer Manufacturers" was organized. Lawrence Sangston was called to the chair, and R. W. L. Rasin, secretary. Houses in the trade in Baltimore, Philadelphia, Boston, Charleston, Camden, N. J., and other places, were represented.

A preamble and constitution were adopted, setting forth that the manufacture and sale of chemical commercial fertilizers have rapidly increased in extent and importance, until the trade has at this time reached a point of development when occasional interchange of opinion and concert of action are advantageous to all concerned. Especially is unity desirable on subjects of national, State and municipal legislation as applied to tariffs and trade regulations, and also upon questions of insurance, freights, &c. Permanent officers were elected for one year as follows: John S. Reese, Baltimore, president; Chas. Richardson, of Philadelphia, first vice-president; Lawrence Sangston, Baltimore, second vice-president; R. W. L. Rasin, Baltimore, treasurer and secretary; executive committee, S. J. McGargee, Philadelphia; W. B. Graves and W. S. Dunan, Baltimore. The association adjourned to meet in Philadelphia, October 4.

Crops and Seasons in Virginia—Melons.

A correspondent in Nansemond Co. writes, May 15th: "Weather contines cool and clear—very fine for farm work, but not good for our tender growing crops. The oat crop is very backward; so is the late seeded clover and grass. We have had rain abundantly and only deplore the absence of warm days and the stimulant of sun's rays to start vegetable life into activity. I hear of complaints among melon-growers of bugs, but my own crop, so far has escaped, thanks to attention to young plants and *plastering*. We are hand and hoe working our 10,000 plants to-day. Nearly all the hills have two sets of plants and a third was made three days since. We find it most certain to use three plantings to be sure of a stand, since if frost and insects destroy the first and second, the third remains to prevent failure of the crop, whose success in a pecuniary point of view depends almost entirely on earliness."

R. S. H., Frederick Co., Va., May 16, writes: "We are having a fine rain to-day. Grain and grass growing splendidly. Most farmers done planting corn, but it comes up slowly in consequence of cold. Potato bugs have commenced operations in full force."

A VERY NICE BREAKFAST BREAD.—Take one pint corn grits—pearl grits is best; one pint milk and water mixed, one spoonful of lard—the same of butter, two eggs and a little salt to taste; mix all together carefully and bake in a pan. This bread is, to my taste, very superior to that made with corn-flour or corn meal. R. C.

Hygiene.

Poisons of the Farmer's Life.

In the Report of the Agriculture of Massachusetts for 1875–76 we find an address bearing the above title, delivered before the Hampshire Agricultural Society, from which we take the following extract:

A most reliable and sure poison for farmers is the *miasma, or poisonous vapor, generated in the refuse matter about the house and the barn.* And this is a more common and destructive poison than either of the others just mentioned. And most of our fevers are caused by the noxious exhalations, or germs, rising from decaying organic matter. Till within a few years, the air contained in the upper few feet of soil has never been brought to notice. And this does not mean simply that air is cold and damp on the ground, but that the upper few feet of the soil—say six—contains much carbonic acid and other poisonous gases. A writer who is probably the first living authority on this subject, says: "A few feet under the surface there is already as much carbonic acid as there is in the worst ventilated human dwellings." Now those gases are not only out in the fields, and at a distance from the house, but they may be, and are, more or less under our dwellings, their abundance depending on the nature of the soil and the proximity of their source. And though there may be no production of them in our own yards, yet these exhalations may travel a long distance underground. In other words, there are currents and winds underground as well as above it. One proof of this is seen in the fact that in cities and large towns where coal gas is burned for illumination, it may often be perceived in a cellar where the pipes are not laid, and even where there is not a main for a long distance. Another proof is found in frozen wells, which are not uncommon. How far underground these gases may travel and enter our cellars, like demons of destruction, research has not yet informed us, since so much depends on location, the nature of the soil, and the prevalent winds above the ground; but the fact remains, that deadly gases do course rapidly through the soil, making what Pettenkofer calls "ground air," and these gases do come up under our dwellings, and produce certain diseases. These gases travel much more slowly in cold than in warm weather, since sunlight and cultivation render the soil porous and easily permeable by them. And hence we see why fall fevers prevail, as the air during the summer months has been silently but continually permeating our houses, until the body is so loaded that the low, lingering fever sets in as a necessary result of accumulating poisoning.

In view of this fact, is it not a hopeless task to try to relieve ourselves of this evil, unless we adopt the Chinese custom of living in a boat, or else of going up in a balloon?

The first common-sense antidote is to carefully absorb all the animal manure or filth on our own premises by dry earth, loam or ashes. When this is done, *ventilate the cellar.* The first day in

spring or late winter, when the cellar windows can be opened, then let the air course freely through it. And never, till the next early winter chill threatens to freeze the succulents, allow them to be closed. Allow the air to stir and be most thoroughly stirred in the lower stories of the house, cellar and all; and then, saving the tin-roofed garret, the other stories will be quite sure to be ventilated also. Or if the housekeeper ventilates her cellar and first stories, she will be quite apt to ventilate the chambers. "Take care of the pence, and the pounds will take care of themselves."

After you have got a good current of air regularly going through the cellar, then give it some light. Oh, what an enemy to immorality, to deadly influences of all sorts, spiritual and physical, is the pure sunlight! Let the sunlight in and through the cellar, if you would have the best protection to the wife and children at home. If typhoid fever and dysentery are preferred, then keep right on, and let alone a dark, damp and dangerous cellar. When you have let the air and light into your cellar, then aid the sun to make it lighter and sweeter by thoroughly washing the ceiling and sides with limewash (whitewash.) The lime will not only protect the timbers from decay and fire, but it will destroy some of the virulence of many deadly gases. It will help, also, to find the rat-holes, the decaying timber, block of wood, vegetable, or meat—those powerful farmer's poisons.

But a more visible and odorous farmer's poison is to be found *back of the shed and the kitchen, and in the barn-yard.* Around how many farmers' buildings—clear round, I mean—can you go, this afternoon, within ten feet of them, without holding your nose, or stepping into filth, over shoes? And yet these very sights and smells are preparing, perhaps, some of this audience for the typhoid fever, which may take a life, certainly will take all the strength of the family to care for, and possibly all the earnings for a year. A farmer, mechanic, or any other man or woman controlling a homestead in New England, is culpable, negligently culpable, if they allow a stinking cesspool, barn-yard, or anything of the sort, on their premises. Such a thing is not a necessity, or even an excusable negligence. For but a small quantity of coal or wood ashes, or loam, if only perfectly dry, is a complete disinfectant for this poison; it will absorb incredible amounts.

And the absolute money profits of saving the drainage of the house is wonderful. For in most of our houses it is safe to say that, during the year, two barrels of soft soap are used and a number of pounds of hard soap. Here, then, are perhaps fifty pounds of soluble potash which are only of use to enrich the coarse weeds about the sink drain. Why not keep a barrel, or box or two, of dry earth close by the sink drain, and every morning and night let a few quarts be thrown in to absorb this most common and enriching food of plants. For I think Prof. Goessmann will tell us that all land-plants contain potash as one ingredient of their structure.

When one visits any of the older countries of the world, he is always struck with the careful saving of the drainage and waste of the house. And as it is carried about the streets in pails, as if most valuable, he is sure of a precious stench, and presumes that it will be precious food to the crops. He there sees scavengers who more carefully save every bit of excrement than does a thrifty Yankee preserve his scraps of lead, brass and iron.

But a word for the barn-yard and pig-pen in this direction. If farmers fully appreciated the value of liquid manures, and the best methods of utilizing them, this matter would take care of itself. At any rate, my limited time allows me to presume this amount of information on your part. But I must do my best to enforce upon you that it is of the utmost importance to the health of the household that, during the months of July, August and September, a barn-yard with pools of filthy liquid, and even moist contents, is one of the very best materials with which to generate autumnal fevers, diarrhœa, dysentery, and this class of diseases. And if the farmer could be sure to see to it that once each day all the barn-yard and pig-pen waste is thoroughly covered with dry earth during the dangerous months, we are willing to insure much less of paying the doctor, and a cleaner bill of health all around. And could I also impress the fact of the money advantage in thus saving the ammonia of his manure, I am sure the physician and the physiologist have done their duty.

Pictures of New York—No. 1.

BY JANE BOSWELL MOORE BRISTOR.

A few genial spring days have brought from their treasure houses, thousands of flowers, and it is not uncommon to pass pavements on great Broadway that are literal masses of bloom; one-half white with calla lilies, over which cotton is sometimes laid, while the other is a mosaic of varied hyacinths, roses and heliotrope. The passion for floral decoration is on the increase, thousands of dollars being sometimes expended on flowers for a single funeral. Another popular taste is the culture of sea anemones. I spent some pleasant hours in Greenwood's, examining these, which are much used in small salt-water aquaria, or standing globes, their brilliant hues contrasting with the vivid green of sea lettuce. These beautiful flower-like anemones are really animals, and, like gold fish, must be fed. They resemble asters, perfect shape, in color deep red, orange, purple, brown, pink and white. They open in sunlight and close at dark, presenting when folded the appearance of buds of fall chrysanthemums. But when almost transparent shrimps leap over them, they have to be very careful, or they will serve as a meal to these lovely but dangerous beauties. Bright scarlet ones come from Bermuda; the purple are found near Newport. At high tide, they would be eight or ten feet under water; yet in these College Place windows, grown in shallow glasses, they flourish abundantly, shooting forth again after they have been cut, and multiplying by division. In and out glide graceful "stickel backs," building nests of bits of plants with gold fish which were first brought from China to gratify the whim of Madame de Pompadour.

The commerce and wealth of a great metropolis make some sights possible which are not seen elsewhere. One of these is "diamond cut-

ting," which a few years ago was unknown in this country, and is still confined to one New York establishment. In ancient times, the diamond was much esteemed, and worn in "the rough," many medicinal properties being attributed to it. The art of cutting with its own powder was discovered in fourteen hundred and seventy-six. At first it was cut in table form, with one row of facets on the surface; the rhomb cut was afterwards adopted, and in the reign of Louis the Twelfth, Cardinal Mazarin had diamonds polished in the form of brilliants, some of which yet belong to the crown of France. Newton was the first to discover the nature of the stone, which, from its great refraction of light, he judged to be a combustible body; a series of experiments proving it to be pure carbon. Being the hardest of all substances, it yields to no file; scratching all other minerals, it is not itself touched by any. It is subject however to the same imperfections that we find in a piece of wood; and in cutting, the grain must be followed, as in timber. To cut across the grain requires friction, the rubbing of one diamond against another. A good stone loses one-half its weight in cutting, but a perfect and regular "cut" greatly increases its brilliancy and value. The largest diamond ever cut in this country weighed eighty-four carats; a carat being equal to four grains, and forty-four carats to an ounce. This was cut by Mr. Hermann, who has now another about half the size, which we saw being polished.

The number of diamonds mined in all parts of the globe, in the last ten years, is said to exceed all that were found before; this, with the depressed state of the money market, have made the price lower than ever before. Many rare gems in this establishment came from Africa, the large number mined there lately having greatly affected the value of diamonds. As an illustration, we are shown one of forty carats, with a slight yellow cast, worth three thousand dollars, which, before the African supply was discovered would have brought twenty thousand.

The great amount of labor required in perfecting them, makes these adamantine gems so costly. The larger number of facets, the greater brilliancy, and for the shaping of each facet a separate process is gone through. Cut first into figures, bounded by many planes, the facets thus formed are polished, increasing the lustre and transparency. The most careful examination of the stone is made by a person of great skill and experience; the diamond after being exposed to intense heat, being sometimes thrown into water, when it will crumble if cracks exist within. Removing "flaws" is of great importance, since owing to the form in which the diamond is cut, and its great degree of refrangibility, the smallest fault is magnified, and seen anew in every facet. When it is necessary to cut away a defect, the spot is rubbed by hand with the sharp edge of another diamond, until a furrow is made. Into this groove the cleaving instrument is fitted, and the "knot" or blemish is removed. Every grain of dust or powder, and each little chip that falls during the process, are carefully saved. To polish a single facet often takes hours. and the usual number to each stone is sixty-four.

The object of the cutter is, so to arrange the facets above and below, that they may reflect the refracted rays of light in different directions, instead of allowing them to pass through the cut stone. The "splitter" or "cleaver" must be a person of the quickest possible perception. We shall long remember that little room facing Fifteenth street, divided from the rest of the house, and looking towards the light, where stones in "the rough" are subjected to the keen eye of Mr. Hermann, who, from life-long practice, decides instantly how each shall be cut. "I can tell what I can make out of a stone," was his quiet reply to our questioning. "I ought to know by this time." Little can we imagine the years of patient intelligent toil it has taken to acquire this proficiency. Is there not a lesson for us all, in this slow, laborious, seemingly rough treatment, through which the diamond alone acquires a brilliancy and beauty with which nothing on earth can compare.

New York, April 15th, 1876.

Yucca Filamentosa.

The Yuccas, says Vick in his Floral Guide for 1876, are a striking class of plants, with long, narrow, strong, sharp-pointed leaves, with a peculiar tropical aspect. *Filamentosa* is the hardiest, and we think will endure almost any of our northern winters. It is called *Adam's Needle*,

because the leaves are sharply pointed and throw off from their edges numerous fine threads. It sends up a strong flower-stem in the middle of the summer, bearing a large spike of whitish flowers. The Yucca is an evergreen perennial, and delights in a rich soil. We usually throw over the plants a few evergreen boughs or something of the kind, as a slight winter protection. We call attention to this old plant with a good deal of confidence, feeling assured that it will more than meet the expectations of ous readers. Our engraving shows the plant in flower.

Two-year-old plants will flower, and as this species is indigenous to the Southern Atlantic States, this plant, deemed so desirable for Northern gardens, is probably well known in its native condition to many of our readers.